

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 809.—Vol. XXI.]

LONDON, SATURDAY, FEBRUARY 22, 1851.

[PRICE 6D.]

Stannaries of Cornwall.—In the Vice-Chancellor's Court.
TIPPET v. CARVOSSO.
SAME v. JOHNS AND TRELEAVEN.
IN RE WHEEL HENRY MINE.

NOTICE IS HEREBY GIVEN, that, pursuant to the several Orders or Decrees, made in the above cause of TIPPET v. CARVOSSO, and bearing date the 28th day of August last; and in the above cause of TIPPET v. JOHNS AND TRELEAVEN, and bearing date the 6th day of November last,—a PUBLIC AUCTION will be **HOLDEN** at LENDEROU'S HOTEL, TRURO, on Saturday, the 1st day of March next, at Four o'clock in the afternoon, for **SELLING ONE (216th) PART, or SHARE, of the said Defendant, Samuel Carvozzo; and TWO (216ths) PARTS, or SHARES, of the said Defendant, William Snowden Treleven, of and in the SAID MINE, and of and in the ORES, HALVANS, MACHINERY, and MATERIALS, and OTHER EFFECTS** upon and belonging to the said Mine.

For further information application may be made to Mr. G. N. Simmons; or Messrs. Carlyon and Paul, solicitors, Truro.

Registered at the Office, Truro, Feb. 20, 1851.

ABSOLUTE SALE.—Well secured Improved rental of £200 per annum, the property being underlet at £1000 per annum.

MESSRS. FAREBROTHER, CLARK, AND LYE, are instructed by the mortgagees to **SELL, BY AUCTION**, at Garraway's, on Wednesday, the 26th February, at Twelve o'clock, unless an acceptable offer is previously made by private contract, an **IMPROVED RENT OF TWO HUNDRED POUNDS PER ANNUM**, for a term of 78 years, from 23d December last past, secured upon the extensive and flourishing **CAMBERLAND COPPER WORKS**, at Llanelly Flats, in the county of Carmarthen. The property is underlet for the whole term, less 10 days, at £210 per annum, and held at £10 per annum. The rent now paid by the company is £1000 per annum.

Particulars may be had 21 days prior to the sale, at the Inn at Llanelly, Ivy Bush, Carmarthen; of Messrs. Birchall and Co., solicitors, 46, Parliament-street, Westminster; at Garraway's; and at the Offices of Messrs. Farebrother, Clark, and Lye, Lancaster-place, Strand, London.

COLLIERY PLANT.

TO BE SOLD, BY AUCTION, on Wednesday, the 5th day of March, 1851, at the POOL COLLIERY, near LLANELLY, Carmarthenshire.—ONE very excellent **PUMPING ENGINE**, cylinder 26 inches diameter, and 7 feet stroke, with two boilers, about 20 tons. This engine is quite equal to new, and has very superior condensing apparatus.

ONE HIGH-PRESSURE WINDING ENGINE, cylinder 18 inches diameter, and 3 ft. 6 inches stroke, with two boilers and winding gear, complete.

ONE CONDENSING WINDING ENGINE, cylinder 24 inches diameter, 5 ft. 6 in. stroke, complete to the end of the connecting-rod.

Also, a considerable quantity of pumps, working barrels, plunger poles, capstans and ropes, waggons, trams, tramplines, wrought-iron rails, smith's tools, lathe, weighing machine, coaling ovens, and many other articles belonging to the said colliery.

Further particulars may be had on application to Mr. W. Thomas, Hall-street, Llanelly.

CUMBERLAND.—FREEHOLD ESTATES AND ROYALTIES, with suitable **FARM BUILDINGS**, within 4 miles of WHITEHAVEN, lying in the district of the celebrated **WEST CUMBERLAND IRON ORE FIELD.**

TO BE SOLD, BY PUBLIC AUCTION (separately or together), at the Golden Lion Hotel, Market-place, WHITEHAVEN, on Thursday, the 6th day of March, 1851, at Three o'clock in the afternoon, all those very valuable **FREEHOLD ESTATES**, called

HOLEBECK AND RATEN ROW.

Situate in the township of FRIZINGTON, in the county of CUMBERLAND, with good **FARM HOUSE** and suitable **AGRICULTURAL BUILDINGS**, containing, by admeasurement, 194 A. 3 B. 12 P., or thereabout, of good **ARABLE, MEADOW, and PASTURE LAND**, and divided into suitable enclosures, well watered, and the whole (except an out-plot, in the parish of Arlestone, containing 29 A. 1 B. 0 P.) lying within a ring fence, at present in the occupation of Mr. THOMAS LEATHES, as tenant from year to year.

HOLEBECK AND RATEN ROW form two distinct estates, in high cultivation, and contain respectively 38 A. 2 B. 17 P. and 61 A. 2 B. 36 P., and being contiguous, are now occupied as one farm. The market towns of Whitehaven and Egremont are within a short distance, and coal and lime being near at hand, are cheap and abundant. The River Eden skirts the property, and good fishing and shooting are to be had.

These Estates, which are situate in the centre of the Iron Ore District of West Cumberland, are within 4 miles from the town of Whitehaven, and it is presumed they abound in the rich deposits of ore peculiar to that district.

Extensive **IRON MINES** are now in **FULL OPERATION**, and working with great success in the surrounding neighbourhood; the facility for exportation and transit from Whitehaven to the Welsh, Scotch, and other manufacturing, having opened out an immense trade, and a large demand for this important mineral. The furnaces of the Whitehaven Hematite Iron Company are within 3 miles from the property.

The tenant will show the premises.

Conditions will be produced at the time and place of sale; and further information may be had by applying to John Spencer, Esq., of Whitehaven; to Messrs. W. and J. Lumb, solicitors, Whitehaven; at whose offices a plan of the estates may be seen; or to Messrs. Gregory, Faulkner, Gregory, and Skinner, solicitors, 1, Bedford-row, London.

TO ENGINEERS, MILLWRIGHTS, SMITHS, AND OTHERS.

MESSRS. FULLER & HORSEY will SELL, BY AUCTION, on the premises, **PHENIX IRON-WORKS, NORWICH**, on Tuesday, the 18th March, and following days, at Eleven o'clock each day, in lots, by order of the proprietor, who is retiring from business, the valuable

PLANT, TOOLS, AND STOCK IN TRADE, including two powerful self-acting surface lathes capable of turning surfaces 16 and 7 feet diameter, one 10-inch self-acting lathe, several engine-turning lathes of various dimensions, self-acting planing machine, two screwing machines, drilling machine, steel tools, an extensive self-acting planing machine, seven double and treble purchase cranes of a most superior construction, two highly finished steam-engines of 10 and 16 horse-power, three steam-boilers, four cupola furnaces, charcoal mill, drying stove, and foundry's tools; 50 tons flasks, 200 tons cast and wrought-iron, 5 tons smith's tools, 800 double and single forges; with bellows and troughs, plate furnace, cutting and punching machine, a cast-iron wheel 27 feet diameter, an assortment of valuable patterns, circular saw bench, 500 feet shafting, 100 wheels, leather strap, 6 tons wrought-iron tram rails, railway trolly, lifting jacks, founder's cart, two pair large wharf gates, the principals of two roofs, and numerous other effects.

N.B.—Promissory notes, to be approved by the vendor, at three months' date, will be taken from purchasers to the extent of £50 and upwards.

The situation of the works is most advantageous for the removal of the lots, being on the banks of the River Yare, with depth of water sufficient for vessels of 100 tons to lie alongside; the height is very low, and the railway station is immediately contiguous. The premises are intersected throughout by iron tramways, with a strong trolly, the use of which, as well as the wharf crane, will be granted to the purchasers without charge.

The machinery may be seen in motion on Saturday and Monday previous to the sale. Catalogues, at 6d. each, may be had on application at the works; or to Messrs. Fuller and Horsey, 13, Billiter-street, London, by whom catalogues will be forwarded, post free, on receipt of 12 postage stamps.

TO LOCOMOTIVE AND RAILWAY ENGINEERS, TURN-TABLE MAKERS, CONTRACTORS, RAILWAY COMPANIES, AND OTHERS.

MESSRS. FULLER & HORSEY will SELL, BY AUCTION, on the premises, **PHENIX IRON-WORKS, NORWICH**, on Wednesday, 19th March, at Eleven o'clock, in lots, by order of the proprietor, who is retiring from business, the valuable

EIGHT RAILWAY TURN-TABLES, with the **WOOD PATTERNS** and valuable **PATENT and MODELS**, for improvements in the Construction of Turn-Tables. The tables are 16 feet and 12 feet diameter, of the Lincolnshire, Manchester and Sheffield, Great Northern, Newmarket, and Eastern Counties lines of railways.

N.B.—Promissory notes, at three months' date, will be taken from purchasers to the extent of £50 and upwards.

May be seen on Saturday and Monday previous to the sale.—Catalogues, at 6d. each, may be had on application at the works; or to Messrs. Fuller and Horsey, 13, Billiter-street, London, by whom catalogues will be forwarded (post free), on the receipt of twelve postage stamps.

COAL AND IRONSTONE, DERBYSHIRE.—TO BE LET.

For a term of years, the valuable **BEDS, or SEAMS, of COAL** lying under the **COLES PARK FARM**, situate in the parish of ALERETON, containing 145 acres, and is well known as the Deep Hard and Soft Coals. Both beds are of excellent quality, and are exclusively used in the Manufactures of Iron, Gas, Malting Coals, and in the London markets, to which they are regularly sent from the collieries immediately adjoining.

The well-known valuable **BEDS of IRONSTONE**, under the same estate, would also **BE LET**, either together with the coal or separately.

The **Great Northern Railway** passing through the estate, gives a direct communication with all markets.

For terms, &c., apply to Messrs. Smithers and Mills, land agents, Chesterfield; or to Mr. Richard Coke, Langton, Alfreton.

WIRE ROPE.—The UNDERSIGNED having recently made extensive additions to their Machinery, respectfully solicit a **TRIAL** of their **ROPE**, which, in **QUALITY of MATERIAL and PERFECTION of MANUFACTURE**, cannot be surpassed.

Patent Wire Rope Works, 39, High-street, Wapping, London.

N.B.—The 24 miles of wire rope in the Wapping Tunnel, at Liverpool, was supplied from this establishment.

MR. JAMES CROFTS, of 4, KING-STREET, CHEAPSIDE, MINING BROKER, in renewing OFFERS of SERVICE to CAPITALISTS, feels much gratified at the extent of patronage and confidence he has received hitherto, and will continue so to treat the interests of his friends in town and country as to deserve a still more important share of their orders, whether for **PURCHASING or SELLING MINING SHARES**.—Mr. CROFTS acts exclusively for **RAISEMENTS**, and will cheerfully give advice on contemplated investments, so far as his knowledge or judgment permits, either personally or by letter.

Numerous sound concerns may be safely invested in, exclusive of dividend mines, but the latter with a certainty, for some years, of 12 to 15 per cent. per annum interest.

MR. CROFTS HAS SPECIALLY FOR SALE—

| | |
|----------------------------------|-------------------------------|
| Tincroft (20 shares) | Lewis (10 shares) |
| South Tamar (20 shares) | Wellington (10 shares) |
| East Tamar (20 shares) | Wheal Tremar (10 shares) |
| Warleggan Consols (20 shares) | Wheal Vincent (30 shares) |
| Alfred Consols | Bedford United (15 shares) |
| Lelant (3 shares) | Cook's Kitchen (10 shares) |
| Wheal Langford (100 shares) | Bodmin Consols (10 shares) |
| North Wheal Robert (2 shares) | Great Wheal Sheba (5 shares) |
| Bodmin Wheal Mary (2 shares) | Bwlch Consols (50 shares) |
| Herodford | Alfred Consols (4 shares) |
| Penzance Consols | West Seton (2 shares) |
| Wheal Providence (50 shares) | Wheal Harriett (150 shares) |
| Grambler and St. Aubyn (1 share) | Hawke's Point (8 shares) |
| Wheal Crebor (10 shares) | East Wheal Frances (4 shares) |

Mr. CROFTS issues a **PRICE CURRENT** of Mining Shares twice each week, which may be had on application.—Dated 4, King-street, Cheapside, Feb. 14, 1851.

MESSRS. FRANCIS & LIGHTFOOT, MINING AGENTS AND CIVIL ENGINEERS.

Office, No. 34, EXCHANGE ARCADE, MANCHESTER.

Messrs. FRANCIS and LIGHTFOOT, may be CONSULTED by MINING COMPANIES or OTHER PARTIES requiring INSPECTIONS and REPORTS on MINES of every description, or by CAPITALISTS and OTHERS desirous of INVESTING their CAPITAL in MINES or other MINERAL PROPERTIES.

Statistics and other general information connected with Mines and the Mineral Districts given or obtained with the utmost dispatch.

Capt. Abaelon Francis having had upwards of 30 years' experience in the practical management of mines, and reported on most of the principal ones in the United Kingdom, applicants may rest assured they will receive full and satisfactory information on matters connected with mining.

Arbitrators and contractors for the erection of every description of mining machinery.

MINING OFFICES, REDRUTH.—JOHN ROBERT PIKE takes this opportunity of announcing, that he has COMMENCED BUSINESS as a GENERAL SHAREBROKER, and that it will be his constant endeavour to give satisfaction to those who may favour him with their orders.

* * * MINES INSPECTED AND REPORTS FURNISHED.

MINING SHARES.—MR. HENRY VATCHER, EXETER, OFFERS his ADVICE and ASSISTANCE to PARTIES willing to INVEST in the ABOVE SECURITIES. Ten years' residence in Exeter, together with periodical visits to nearly all the Mines in Devon and Cornwall, enables him to become thoroughly acquainted with their respective merits.—Mr. VATCHER has at his command, at all times, practical and experienced agents, so that if any inspection is required, the same can be done without delay.

MR. BELL WILLIAMS, MINE BROKER AND VIEWER, 16, CASTLE-STREET, LIVERPOOL.

MR. JOHN DAVIES, MINING SHAREBROKER, No. 38, TOWER-BUILDINGS, TOWER-GARDEN, LIVERPOOL.

MR. JAMES STRIDE, formerly of the firm of Bulmer & Stride, Parliamentary Agents, and late of Spring Gardens, MINING SHARE DEALER and AGENT, begs to state that he now TRANSACTS MINING BUSINESS at the **JAMAICA COFFEE-HOUSE, CORNHILL, CITY.**

Considering the improving value of Mining Property, and the consequent increasing demand for Shares, he deems the present time favorable for offering his advice in respect to that description of property.

MINING OFFICES.—No. 18, Adam-street, Adelphi, London.

NOTICE.—THE CHIEF PROPRIETORS of the ROCKS and TREVERBYN UNITED TIN MINES, GREAT WHEAL BADDERN TIN AND LEAD, PENDARVES AND ST. AUBYN CONSOLS TIN AND COPPER, and UNITY CONSOLS TIN AND COPPER, in the county of CORNWALL, Having their OFFICE at No. 51, KING-STREET, MANCHESTER, beg leave to acquaint the Public, that they have

OPENED OFFICES at No. 55, OLD BROAD-STREET, LONDON. For the purpose of FORMING a METROPOLITAN CONNECTION with SELECT PARTIES, who alone will be received.

For particulars apply to W. W. TERRINGTON, Secretary, No. 55, Old Broad-street, City.—January 30, 1851.

TREVELYAN MINE, NEAR MARAZION, CORNWALL.

FOR SALE.—An AUCTION will be held on Wednesday, the 24 day of April next, at Three o'clock in the afternoon, at Crotch's Hotel, HAYLE, in the county of Cornwall, for **SELLING** all that valuable **TIN and COPPER MINE, or ADVENTURE**, called or known by the name of **TREVELYAN MINE**, situate in the parish of PERRANUTHOE, in the county of Cornwall, extending 800 fathoms in length on the course of the lode, and 400 fathoms in width, and contiguous to some of the most productive mines in Cornwall, and within a short distance of the Marazion Mine, the lode of which runs through the limits of the said; together with a **STEAM ENGINE**, of 41-inch cylinders, with **PIT WORK and MACHINERY**, complete; several horse-wheels, chains, kiddles, and other materials; and an **ACCOUNT-HOUSE**, smiths' and carpenters' shops, tin-house, and other convenient buildings on the mine.

There are at least 16 lodes and branches within the said, some of which are 12 ft. wide, and extensive old workings are interspersed over the said, and the present proprietors have, during the last four or five years, raised about £12,000 worth of tin from a small portion of the limits—the average produce being about 10s. a barrow.

Several shafts have been sunk and properly secured, so as to drive levels on the course of the lode, and the engine-shaft is at present 28 fathoms from adit, and 50 from surface. A new shaft has been obtained from the lord of the soil at 1-18th dues, and this will be assigned to the purchaser.

Any information that may be desired will be furnished on application to Capt. Henaley, at Marazion, who will show the workings; and any further particulars may be had of Mr. William Richards, Chapel-street, Penzance, Cornwall.

Dated February 20, 1851.

UNITED MINES, TAVISTOCK.—At an ADJOURNED MEETING of the adventurers in the **UNITED MINES, TAVISTOCK**, held at the Purser's Office, No. 7, ALHAMBRA-TERRACE, Plymouth, on Saturday, the 15th day of February, 1851, at Five o'clock p.m.—Present,

JOHN BATLY, Esq., in the chair.

The Purser stated that every share in the mine was taken up—that the works were progressing in a most satisfactory manner, and that the shaft was secured to the 40 fm. level, and that the machinery would shortly be in perfect repair.—The report this morning received from the mines, stating that "Risehill lode looks very well—rather better than it did last week; it is within 15 fathoms of our boundary," was read; the report as to the value of the lode has been this day fully confirmed by Captain Richard Williams, the manager of Risehill.

Resolved.—That the rules now read be approved and adopted.

The following is a statement of the tin ores raised by the late adventurers, from April, 1847, to July, 1850, with the prices realised for the ores sold, from Wheal Anderton Mine, now part of the United Mines:—

| | Tons c. gr. lbs. | Av. Price p. Ton. | Amount. |
|---------------------------------|------------------|-------------------|------------|
| April to Nov., 1848, before any | 107 4 2 | £34 3 0 | £3658 7 11 |
| calculated or burnt | 43 18 0 | 47 6 1 | 9076 13 1 |
| From Nov., 1848, to Nov., 1849 | 43 18 0 | 47 6 1 | 9076 13 1 |
| From Jan., 1850, to July, 1850 | 18 14 0 | 48 10 3 | 907 9 3 |
| Total | 208 16 12 | | £6642 10 3 |

Resolved.—That the reports and information are perfectly satisfactory, and such as, in the opinion of this meeting, to justify the confident expectation of the realisation of speedy and ample returns to the adventurers.

Resolved.—That the company fully approve of the course adopted by the purser, in carrying out the concerns of this company up to this time.

Resolved.—That Dr. Yonge, and Messrs. Barry, Fritham, J. E. Marc, Mitchell, D. H. Hastings, Haines, Fidler, and the purser for the time being, be the first committee.

Resolved.—That Capt. William Harper be appointed the resident agent on the mine, with a salary of £26 6s. per month, upon the express understanding that he shall, on no occasion, leave the mine without the consent of the committee.

Resolved.—That Mr. J. Elliot Square be appointed the purser, with a salary of £5 1s. per month.

Resolved.—That Mr. Matthew Loom, civil engineer, be appointed the engineer of the company, at a salary of £1 1s. per month.

Resolved.—That the appointment of inspecting agents be postponed.

Resolved.—That the recommendation of the committee nominated on the 4th inst., to appoint Capt. Samuel Scobee, Robert Dunstan, Richard Williams, James Carpenter, and John Leach, to inspect the mine, to report thereon, and to lay down a plan for the future workings, be approved of, and that this be obtained without delay.

JOHN BATLY, Chairman.

TO BUILDERS, EXCAVATORS, AND OTHERS.—The DIRECTORS of the **COMMERCIAL GAS COMPANY** will meet at the Company's Offices, Stepney, on Wednesday, the 26th inst., to **RECEIVE TENDERS for the EXCAVATION and ERECTION of a BRICK GAS-HOLDER TANK**, of 104 feet in diameter. Plans and specifications can be seen, and particulars obtained, at the Company's Offices, on and after Wednesday, the 19th inst., between the hours of Ten and Two. Tenders, sealed and endorsed, "Tender for Excavation and Erection of Gas-holder Tank," to be forwarded to the Secretary by Twelve o'clock on Wednesday, the 26th inst. The Directors do not bind themselves to accept the lowest tender.

Stepney, Feb. 10, 1851. By order of the board, G. JACQUES, Secy.

TO CAPITALISTS AND OTHERS.—A Gentleman in South Wales, having a valuable **MINERAL PROPERTY**, consisting of **ANTHRACITE COAL and IRONSTONE**, most advantageously situated, close to a good harbour and railway, wishes to meet with a **PARTY** who would **JOIN HIM in OPENING a WORK**, for which a small outlay only would be required. The option of taking a proportion of profits, or interest, at the rate of 5 per cent., would be given.—For particulars apply to "A. B.," care of Mr. John Thompson, 16, Billiter-street, City.

TO PLUMBERS, TIN-PLATE MANUFACTURERS, &c.—SHARES of a **VALUABLE PATENT**, connected with, and important to, Persons engaged in these and other analogous branches of business, to **BE DISPOSED OF**. Address "S. D. M." at the office of the *Mining Journal*, 26, Fleet-street, London.

WANTED.—By an experienced Person, who has resided several years in Spain, a **SITUATION as CLERK, or as CLERK and DIALLER**, in any **MINES ABROAD**. The Advertiser is well acquainted with the Spanish language, and has a thorough knowledge of his profession and accounts: would have no objection to making himself generally useful. Most unexceptionable references given. Address (pre-paid) to "A. Z. M.," *Mining Journal* Office, 26, Fleet-street, London.

STEAM-ENGINE WANTED.—WANTED TO PURCHASE a 60-hp. **SECOND-HAND ENGINE**, in good condition, with or without boiler. Apply to Captain Trevelyan, St. Ives, Cornwall.

WHEAL PROVIDENCE MINE, SOUTH SYDENHAM, DEVON.—The **COST-BOOK** of this mine having been **UNLAWFULLY MADE USE OF** by some PARTIES, against whom the proper proceedings are now being taken, the **PUBLIC** are requested to exercise **CAUTION** in dealing with persons claiming to have an interest in the said mine. THOMAS HARVEY, a Shareholder. London, Feb. 20, 1851.

WICKLOW COPPER MINE COMPANY.—Notice is hereby given, that the **DIVIDEND**, at the rate of £30 per cent. per annum, declared for the past half-year, will be **PAYABLE** on and after the 1st day of March next, at the office of the Company, 10, Lothian Chambers, 43, Dame-street; and in London at the banking-house of Messrs. Paget, Bainbridge, and Co.—Dublin, Feb. 21, 1851.

LEWIS MINES COMPANY.—Notice is hereby given, that a **DIVIDEND of TEN SHILLINGS** per share will be **PAYABLE** here on Wednesday, the 26th inst., and succeeding Wednesdays, between the hours of Twelve and Three. Salvador House, Feb. 12, 1851.

CONSOLIDATED COPPER MINES OF COBRE ASSOCIATION.—Notice is hereby given, that a **DIVIDEND of THREE POUNDS** per share will be **PAID** to the holders of Certificates in this Company, at the office of the Association, 26, Abchurch-lane, on and after Tuesday, the 26th day of February inst., between the hours of Eleven and Three o'clock. The proprietors are requested to leave their Certificates at the office, for examination, three clear days before the day of payment. By order of the Court of Directors, WM. LECKIE, Secretary.

REAL DEL MONTE MINING COMPANY.—Notice is hereby given, that on Wednesdays and Saturdays, after the 1st day of March next, the sum of **ONE POUND** will be **PAYABLE** upon every Red Debenture, and **TWO POUNDS** upon every outstanding £50 loan of 1827, being the second division of proceeds of sale of the Company's property. The red debentures, or the subscription receipts for the loans, must be left with me at the office, 6, Queen-street-place, Southwark-bridge, London, for at least one week previous to the payment of the dividend. The holders of debentures or loan notes who have not yet sent in their claims to the first dividend, are requested to do so forthwith. By order of the directors, JOHN PHILLIPS, Secretary.

WEST POLGOOTH TIN MINING COMPANY.—A **GENERAL MEETING** of the adventurers will be held at 20, St. Helen's-pendace, Bishopsgate-street, on Thursday, the 27th inst., at Two o'clock precisely, for the purpose of making arrangements for disposing of the mine, or otherwise. 15, Old Broad-street. RICHARD EMERSON.

REGISTRY FOR THE SALE AND PURCHASE OF MINING SHARES.

DURRANT & CO., MINING SHAREBROKERS, 58, LOMBARD-STREET, LONDON. Beg to draw the attention of Capitalists to their **REGISTRY for the SALE and PURCHASE of SHARES.**

| | |
|---------------------|-------------------|
| Devon Great Consols | West Buller |
| Carn Brea | Tolgus |
| West Caradon | South Caradon |
| Trelawny | Great Wheal Sheba |
| Wheal Mary Ann | Trevelyan |
| Wellington | Bedford United |

N.B.—Statistical information furnished on British and Foreign Mines.—No CHARGE made for the registration of shares unless business be transacted.

MINING SHARES FOR SALE.

| | |
|------------------------|----------------------|
| 255 Wheal Langford | 60 Caradon Vale |
| 15 Copper Bottom | 90 Wheal Trevelyan |
| 15 Wheal Gill | 10 Cwm Erwin |
| 21 Trevelyan | 25 Wheal Augusta |
| 35 West Phoenix | 10 East Wheal Sheba |
| 50 Dartmoor Forest | 13 Wheal Vanton |
| 15 Henscock | 15 Hensington Park |
| 35 Great Sheba Consols | 45 Trevelyan Consols |
| 32 Wheal Virgin | 45 East Halloweside |

For further particulars apply to Mr. J. H. MANDEVILLE, 25, Change-alley, Cornhill.

MINING OFFICES.—48, THREADNEEDLE-STREET, LONDON.—Messrs. THOS. FULLER & CO. beg respectfully to call the attention of CAPITALISTS to MINING, as being the most **SAFE and PROFITABLE** MEDIUM of INVESTMENT, and are in a position to **BUY and SELL** in all the **DIVIDEND-PAYING MINES**, and have on hand several other Mines, which will insure to capitalists the most safe investment, and will pay from 15 to 30 per cent.

MINING AGENCY.—The SUBSCRIBERS respectfully intimate, that their old and extensive CONNECTIONS afford them peculiar FACILITIES for EFFECTING SALES or PURCHASES of MINING SHARES with the utmost promptitude, and upon the best possible terms. They also beg it to be distinctly understood, that considering it to be incompatible with their duties as agents to speculate upon their own account, they have determined to adhere exclusively to a legitimate commission business. JAMES S. TRIFF & CO., Lombard-street Chambers, No. 33, Clements-lane, City.

MINES.—MOLYNEUX & CO., 6, FINSBURY-PLACE SOUTH, and 6, WEST-STREET, FINSBURY-CIRCUS, have SHARES FOR SALE in **DIVIDEND-PAYING** and OTHER MINES, which will ensure to capitalists the safest and most unexceptionable investment.—Office hours from Ten to Five o'clock.

MR. JOHN CREFT, MINING SHAREDEALER, No. 1, ROYAL EXCHANGE BUILDINGS, LONDON, has on hand **FOR SALE**—Wheal United Hills, North Basset, Wheal Franco, Peter Tavy and Mary Tavy, South Carn Brea, Bolanos, Swan Pool, Devon and Courtenay, and several other valuable mine shares.

MR. W. BIRDSEY, MINING AGENT, begs to acquaint his Friends and the Public, that he has OFFICES at No. 1, ST. MICHAEL'S-ALLEY, CORNHILL, and takes this opportunity to thank them for the favours he has hitherto received. From an extensive experience in MINING PROPERTY, in which he has been engaged upwards of 20 years, Mr. Birdsey flatters himself he will be enabled to give much general information—he having personally visited most of the mines in Cornwall.—Mr. BIRDSEY trusts, by strict attention to the interests of those who may honour him with their confidence, to merit a continuance of their orders.

MESSRS. BOXALL & CO., MINING SHARE DEALERS, 5, CROSBY HALL CHAMBERS, BISHOPSGATE-STREET.

MESSRS. TREVARTON AND CO., MINING SHARE DEALERS AND BROKERS, 5, ST. JAMES'S-STREET, PALM-MALL.

RAILWAY AND MINING OFFICES, No. 3, CASTLE TERRACE, EXETER.—Mr. JOHN JUNE, RAILWAY and MINING SHAREBROKER, OFFERS his SERVICES to CAPITALISTS in the PURCHASE or SALE of ANY DESCRIPTION of PROPERTY; and will be happy to point out a selection of such stock as appears the most eligible, from data that can only be arrived at by those who give an undivided attention to the subject.—Every information afforded (either in person or by letter) to capitalists wishing to invest or exchange their securities, and sales or purchases effected upon the best terms, and at one-half the commission usually charged.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

| | | |
|-----------|---|--------|
| THIS DAY | Medical—33, George-street, Hanover-square | 8 P.M. |
| | Royal Botanic—Inner Circle, Regent's-park | 3 P.M. |
| MONDAY | Geographical—3, Waterloo-place | 8 P.M. |
| | British Architects—16, Grosvenor-street | 8 P.M. |
| TUESDAY | Medical and Chirurgical—53, Berners-street | 8 P.M. |
| | Civil Engineers—25, Great George-street | 8 P.M. |
| | Zoological—11, Hanover-square | 9 P.M. |
| WEDNESDAY | Society of Arts—Adelphi | 8 P.M. |
| | Geological—Somerset-house (anniversary) | 1 P.M. |
| THURSDAY | Royal—Somerset-house | 8 P.M. |
| | Antiquaries—Somerset-house | 8 P.M. |
| | Royal Society of Literature—4, St. Martin's-place | 4 P.M. |
| FRIDAY | Royal Institution—Albany-street | 8 P.M. |
| SATURDAY | Asiatic—5, New Burlington-street | 2 P.M. |

GEOLOGICAL SOCIETY.

Papers to be read at the above society, Feb. 26.—1. On the Silurian Rocks of Scotland (part 2), by Sir R. L. Murchison, F.G.S.—2. On the Basement Beds of the Inferior Oolite in Gloucestershire, by the Rev. P. B. Brodie, F.G.S.—3. On the Tagros Range of Western Persia, by W. K. Loftus, Esq., F.G.S.

INSTITUTION OF CIVIL ENGINEERS.

FEBRUARY 11 and 18.—WILLIAM CUBITT, Esq. (president), in the chair.

The discussion on Mr. A. V. Newton's paper, "An Inquiry into the Nature of Patent Law Protection, with a view to the better appreciation and security of the Rights of Inventors," was continued throughout both evenings.

The meeting was then adjourned until Tuesday, February 25th, when the following paper will be read—"Description of the Royal Border Bridge, erected over the River Tweed, on the line of the York, Newcastle, and Berwick Railway," by Mr. G. B. Bruce, M.I.C.E.

GEOLOGY.—Professor Silliman, F.G.S., the eminent geologist, has commenced a series of lectures at the Spingler Institution, New York, which is to comprise a comprehensive sketch of the formation of the world from the creation of the first marine plant until the human era. The first lecture treats of a view of the structure of the globe, and the powers produced, with the arrangements and modifications of the mineral masses; the second, marine life, which prevailed in the formations above the primary, and below the coal; third, the earliest terrestrial vegetation, beds of coal, and other attendant strata; fourth, vegetation and animal life between the era of coal and that of the tertiary; fifth, the era of tertiary strata; sixth, the human era, man and his contemporaries, concluding with a view of the true relation of science to religion. It is the professor's intention on the termination of the course to proceed to Europe; and it is probable that in the course of the summer his lectures will be delivered in London, when we shall have the pleasure of reporting them fully.

ON FIRE, AND ITS ANTAGONISTS.—From time immemorial, from the earliest to the latest periods of scientific research, the principle called fire seems to have engaged the attention of mankind; and we are not surprised to find Mr. J. H. Pepper, the chemical professor to the Royal Polytechnic Institution, still drawing crowded audiences daily to his lectures on this highly-interesting subject. Prometheus stole fire from Heaven (perhaps was an electrician), but he might have spared himself the danger of seeking celestial flame, could he have had a glimmering idea of the wonders of modern science, and the ease with which this agent may be derived from terrestrial matters. We followed the learned professor with much pleasure through his varied experiments. Fire producing water and water fire—perfectly cold materials, by contact, evolving heat and light—the element oxygen (the most popular attendant of the chemist), performing untiring work—until we almost lost round with dread, and ask oneself, how can so much fire be produced with safety? But all came off well, and the fire was succeeded by the opposite agent, the very antipode or antagonist of fire—water. The old enemy of combustion was shown to be useless in many cases, but the exclusion of oxygen (which is termed smothering flame) quickly extinguishes fire; and, finally, an invisible agent, called carbonic acid, completely assured us that fire-engines are not the only weapons to be employed against flame. The lecturer was most deservedly applauded throughout his very excellent discourse by a large and highly respectable audience.

ANOTHER CURE OF ASTHMA OF FOURTEEN YEARS'

standing by Dr. LOCOCK'S PULMONIC WAFERS.—Holyhead-road, Wednesday.—Sir, When I received the first box of Dr. Locock's Wafers from you, I was labouring under one of those attacks of asthma to which I have been subject for about 14 years. My breathing was so very difficult that I expected every inspiration would be my last. As for sleep, that was impossible, and had been so for several weeks. The first dose (only two small wafers) gave me great relief; the second more so—in short, the first box laid the groundwork for the cure, which only four boxes have effected, and I am now quite well. (Signed) G. E. BIGNELL. Witness, Mr. F. C. LABURY, surgeon, &c.—To SINGERS and PUBLIC SPEAKERS they are invaluable for strengthening and clearing the voice, they have a pleasant taste, price 1s. 1d., 2s. 9d., and 11s. per box. Sold by all medicine vendors.—Also Dr. Locock's Female Wafers, the best medicine for females. Full directions are given with every box.

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WASTE GASES FROM THE BLAST-FURNACE.

BY DAVID MURPHY, ESQ.

[Concluded from last week's Mining Journal.]

Take, for example, a furnace, 8 ft. across the top, filled through a tube, 8 ft. deep. Diminish the diameter of the tube to 4 ft., and fill only coke into it. The flange covering the annular space will then be 2 ft. wide. In this flange we have (say) six openings, secured with sliding covers, to be made air-tight by the means already used for that purpose. Into these openings fill all the ore. To give free vent for the gas, I would carry the conducting tube round the furnace—the top flush with the top of the filling place, and have six flues, or openings, into it, underneath the whole parts of the flange. If these flues were each 3 ft. square, their joint area would be rather more than the area of an 8-ft. circle. I have understood the ordinary size of the conducting tube is 3 ft. square. This cannot be large enough to give a free vent, let the draught of the boiler chimney be ever so great. As it is evident the opening of the slides to fill the mine would stop the abduction of the gas, and admit air into the annular space, three or six partitions of iron-plate must pass from the underside of the flange, abutting from the wall to the tube, and of the same depth of 8 ft. Six partitions would be the safest and most complete. These would divide the annular space into as many compartments. Each of these would be filled separately and successively; and a slide door, or damper, being dropped down into the corresponding flue before the filling cover was removed, the access of air to the main tube would be cut off, and five-sixths of the annular compartments would continue delivering gas. The damper being down, and the chain for raising it unhooked, when the filling barrow came forward, there would be no obstruction on the floor. If each filling orifice were provided with a hopper, and the charge filled into it, before the slide cover were withdrawn, there would be the least possible access of atmosphere—the cover being thrust to the moment the hopper had voided itself; but this might be quite an unnecessary nicety, because the flue being stopped there would be a strong efflux of gas outwards. If this mode of filling be adopted, I would stake the existence of your valuable Journal (were it in my power) against the possibility of any difficulty on the score of scaffolding continuing to exist. A pillar of coke of concentrated heat will always be descending into the hearth, radiating in even circles towards the sides the proper degrees of cementation and deoxidation, and melting instantaneously in the fusing region the prepared materials which approach within its circumference. The gases in the annular space will pass through the whole body of mine before they make their exit to the boilers, imparting that gradual increase of temperature to the ore as it descends, which appears to be a point of great importance to the abstraction of oxygen. The surface of the materials at the sides of the furnace, instead of being constantly 10 ft. at least, with an 8-ft. tube, below the level of the filling place will be only three, reckoning on the filling being kept flush with the bottom of the gas flues. The surface for collecting gas will be increased by 33 circular feet in addition to what previously existed, according to the taper of the walls, on a level with the bottom of the tube. The whole annular space will be amply sufficient to receive the mine and flux; and the central tube, when the surface has sunk 4 ft., will be capable of receiving more than a ton of coke. An orifice in the cover of the tube, at least a foot in diameter, would be very advisable to aid in preserving the central upward ascent, and to counteract the lateral tendency of the main channel of escape. This, of course, would be so much lost; but the main object is to have not all, but all that we can get with economy; but if there is exhaustion at work drawing off the gas to the boilers, it is plain no such aperture can be allowed. In this case, it would be advisable to erect the apparatus over the furnace—that is to say, when the height of the furnace for maximum effect has been ascertained, let the tube and its appendages be applied on the top of that level. If so much as 8 ft. were inconvenient, 4 ft. might be within, and 4 ft. above, the previous filling level. To avoid any jamming of coke in the tube, though I do not apprehend there are actually any ill consequences arising from that, nothing is easier than to give it a slight taper, by a few inches extra width at the base. The purest gas, most free from carbonic acid, would evidently in the above arrangement be obtained from the tube itself. This would require quite different contrivances to secure an unremitting supply for the boilers during the filling. I have views on this point which would comprise a method for giving a more intense heating effect to the gas when delivered for combustion; but as their perfection depends upon exact information, which I do not possess, as to the inflammability of the gases at different temperatures, from 60° upwards, I will not mix uncertain matter in this letter, to divert attention from arrangements—the practical effects of which by experience I can confidently predict; but generally I would again remark on the importance of not obstructing the vent of the blast at top. This will be sure in itself to cause a diminution of make and waste of fuel, be the other arrangements ever so perfect. As the covering over the top of the furnace confines much heat, which otherwise escapes by radiation, and prevents any waste of material by exposure to the air, it would be quite practicable and consistent to make the top of a furnace from which gas is to be taken double the area which would otherwise be given to it. This would obviate a part of the obstruction; and, in apportioning the spaces, I would increase the annular space in much greater degree than the diameter of the tube which is to receive the coals. Many doubts and objections to this mode of filling will arise in the minds of those who have not before considered it; but I will answer them all in brief—try it. When I was weary of combating every possible species of objection, I tried it; and the result even exceeded my expectations. It is well known the mine finds its way down much faster than the coke, and very much so in proportion as it is rich. It must be remembered that the heat in the upper regions of the furnace is not generated there by combustion. The ore does not require the coke to touch it to keep it warm. The heating influence is the passage of hot gas, which is generated by combustion within a very short distance from the tuyères. This hot gas, which is the deoxidising agent, being once generated, expands through every region of the furnace; and it is not of the least consequence if there be not an ounce of coke to be found within 3 ft. of the walls of the upper part of the furnace, so long as the hearth is full, to generate the vital circulating current. But even this denudation of coke will not ensue. The coke will spread outwardly, and the heavy mine fall through it inwardly, until they reach the widest part of the furnace, where the complete action towards the centre begins, uninfluenced by the opposite outward action, which belongs to the entering materials. In the uniform descent from the sides to the centre, as exhibited in the sand glass, the heavy always tends to outrun the light—the mine to pass the coke. It is to keep the ore back from fusing too soon that furnaces are carried to such a height; and the annular plan of filling carries out and assists the same principle horizontally, which is acted upon vertically. The more the ore can be retarded, until the fusing vacuity is made, into which it must fall, the more complete, uniform, and certain will be the whole operation of smelting, with the smallest expenditure of coke. This mode of filling, carried to the greatest extreme, would, I am confident, be most beneficial where the material is a heavy iron sand—such as the Wootz ore of Porto Novo. The extreme and troublesome rapidity with which this ore came down into the hearth was, I cannot have the least doubt, a main cause of irregularity of quality in the product. It engendered by necessity a crude digestion; and I can state certainly that the neglect of this mode of filling has generally been one cause of the difficulty of smelting rich ores.

I am gratified to see that M. Levi has renewed his valuable communications. The investigation of the real merits of the prejudice in favour of the use of limestone, has long been a desideratum, which I have myself looked forward to undertaking at a convenient opportunity. Some of the inferences in the present paper, I rather demur to. For instance, the conversion of carbonic acid into carbonic oxide can in itself be no disadvantage; but quite the contrary, by perfecting the deoxidizing medium. The real cause of loss must be the absorption of heat entailed by that chemical change, and, as M. Ebelmen points out, by the vapourisation of the carbonic acid. However, to appreciate justly M. Levi's details, it would be very important to know what circumstances led to the use of so lofty a furnace as 54 ft., the highest I ever knew in permanent work, and also its other proportions. One advantage I have looked forward to in the use of caustic lime is a degree of diminution in the weight crushing on the coke.

P.S.—Since writing the above, I perceive that a patentee in this matter (Mr. Palmer Budd) ignores the existence of the alleged evils at works with which he is acquainted. Nothing is more probable than that they do not occur with certain materials. The lumps of Welsh ironstone, as they are used, may keep the furnace regularly open in whatever way they are put in, and carry off besides the obstruction of a large quantity of red ore. The Scotch blackband enjoys fully equal facilities, but there are materials which will not brook such free and easy treatment; and it must be with

such troublesome subjects that those effects must have been experienced, which, whilst they are strictly consistent with principle, we cannot suppose would have been narrated in the *Journal of the Franklin Institute* without a foundation in fact. Besides the foregoing consideration of size, it is obvious what different consequences must ensue from stowing under the hatches of the gas apparatus an ironstone porous from calcination, and a raw hydrated ore, combined with 10 or 15 per cent. of water. The increase of make stated by Mr. Budd, I can only explain by the existence of an exhaustive arrangement, which diminishes resistance to the ascent of blast. Where stoves are placed at the top of the furnace, with chimneys above, there must undoubtedly be a relief beyond the ordinary exit of the blast against a wide column of atmosphere. Any arrangement which creates an exhaustion which will permit the blast to enter, and pass through the materials more rapidly, is sure to increase make with economy of fuel. It will supply the heat of a greater force of blast, without the destructive actions of such a force.

ATMOSPHERIC INFLUENCES.—NEW SERIES—No. III.

BY FRANKLIN COXWORTHY, AUTHOR OF "ELECTRICAL CONDITION."

All works, however stupendous, have their commencement, and we have endeavoured to define the conditions under which were deposited certain portions of the earth, as a nucleus, to the further accumulation of matter, that should prepare a soil fit for the existence of both the animal and vegetable kingdoms. What, then, were the conditions that induced this accumulation? The nucleus having at its base a bed of lime, which is a bad conductor of heat, was insulated from the heat of the central portion of the globe, and would, therefore, agreeably to the conditions which govern crystallisation, necessarily accumulate from the semi-fluid boiling mass the matter held in solution, in the order of solubility, the less soluble salts, or matter, being the first deposited; and when the water confined within the hills of lime, to which reference has already been made, was sufficiently reduced in temperature, life was given to a certain class of animals, the lowest in the order of creation, which not only greatly assisted in concentrating the matter, but also in securing a disposition that should render it suitable for the first of vegetable life.

The principle of life is beyond the reach of the human understanding; we can reason only on matter as we find it, and the properties it possesses; and electricity, if not the life-spring of both the animal and vegetable kingdoms, is, at least, essential to their existence; life, therefore, dawned only when the soil became sufficiently cool or electric for its preservation, and the low electrical condition of this period admitted only of the existence of animals the lowest in the order of creation—consisting, in fact, of a little animal matter surrounded by a coating of lime, such as the coral insect, which still abounds in the warmer latitudes.

These little animals, then, rapidly accumulated matter on the tops of the irregularities constituting the hills of the nucleus, and ultimately raised them to within a short distance of the surface of the water. On these hills we conceive, commenced the vegetation that formed the first of the coal bed formation; but here exists a difficulty, that has caused the geologist to create large tracts of land, rivers, and estuaries, before any land was formed, and, in his imagination, to cause that land to rise and sink, as if it were a piece of India-rubber, periodically acted on by mechanical pressure.

That coal is the product of ancient vegetation entombed in mud and sand, and in the course of ages reduced to its present state by chemical change, cannot be doubted; but, consistently with such conclusion, it might be assumed either that the plants grew where the coal now exists, or that they had been washed down into estuaries, and there accumulated; or that the coal was the product of a bog or peat moss, an opinion supported by microscopic investigation. It is highly probable that each of these theories is correct in certain localities, and in either case the alterations which must have taken place are very remarkable; for example, in the north of England the total thickness of the coal-bearing strata may be estimated at 3000 feet, whereas the coal itself is arranged in many layers or seams, the total thickness of which does not exceed 60 feet, whilst the thickness of the seams varies from a few inches to 6 feet or 7 feet. In the Newcastle district, counting the minute seams, there are 40 layers. At Dudley there are 11, of which one is 30 feet thick. In South Wales there are 23 beds, exceeding 1 foot 5 inches in thickness, besides many others, the total thickness of workable coal being 95 feet, equal in mass to many hundred millions tons of coal. At Mons there are 115 workable seams, few of which exceed 3 feet thick. Besides the Irish and Scotch coal-fields, England and Wales possess the following coal basins:—Northumberland and Durham, Yorkshire, Staffordshire, Lancashire, Whitehaven, Warwickshire, Shropshire (including Coalbrook Dale), North Wales, South Wales, some of which may be subdivided into other basins.

Such masses of vegetable matter, composed of plants long since passed away from the living world, of which more than 300 have been figured and described, 200 belonging to the order of ferns, and others to *giant mosses*, and to *colossal plants*, exhibit peculiar conditions of organic life. * * * The seams are sometimes extended over a wide space, but the general character of a coal deposit is that of a basin.

We have made selection of the above extracts from a work by Lieut.-Col. Portlock, R.E., on rudimentary geology, in consequence of the condensed form in which they state the facts of the case, not with a view of questioning the theories, the fallacy of which a little reasoning cannot fail in demonstrating; and we will now endeavour to apply these facts to the solution of the difficulty, which we were unable to remove without first placing before the reader the premises.

Our little nucleus we will suppose to have comprised the coal-fields of the United Kingdom, France, Germany, Scandinavia, and of North America, and that the coral insect had raised the hills composing the basins nearly to the surface of the water; and we would add, that the tops of these hills gave birth to the first of the vegetable kingdom; but coal is not composed of marine but of land plants, which could not take root under water; we have, therefore, first to explain how the summits of these hills were raised above the level of the water.

We have already shown that the water now constituting the ocean once formed part of the atmosphere, and that during the condensation of this vapour there must have been a progressive decrease in the pressure of the atmosphere on the earth's surface; and we think it will be admitted as equally demonstrative, that the collection of this vapour in a condensed form could not fail in exercising an increased influence on that portion of the globe not covered with matter. There were, then, two forces in operation, simultaneously tending to the elevation of the land, decreased pressure on its surface, and increased pressure on the surrounding mass, which from water being a bad conductor of "heat," and of that electrical condition understood by "cold," must long have continued in a pulpy state, and would, therefore, readily yield to the pressure of the accumulating water, and necessarily slowly raise the land. On the tops of these hills vegetation first took root, and being composed of mosses, or plants of a creeping character, rapidly extended over the water or semi-fluid then composing the lakes, and ultimately formed a compact mass, that would admit of the growth of the ferns and plants of larger growth. It has long been established as a law in vegetable physiology that the roots of plants ramify in proportion to the distention of the branches; and, therefore, as the beds increased beneath, the ferns would assume the character of the tree, and, consequently, could not fail, as they increased in size, in depressing the "bog or peat moss" below the surface of the water.

Electricity is the cause of crystallisation, and the sustaining agent in vegetation; and, therefore, so long as the water was covered with vegetation, which disposed of the electricity, no condensation of the salts could take place; but immediately the mass was depressed below the surface, the electricity brought down by the condensed vapour would act on the salts held in solution; and we are informed "that, in several places, erect stems of trees are found, with their roots still fixed in the shale beds, and crossing the sandstone beds at almost right angles," which sandstone beds would naturally depress the mass to the bottom of the basin. Whilst it would be difficult to define the circumstances under which the water alternately gained upon the land, and then raised it to above its own level, it will be allowed, we think, that such a proposition is strictly conformable to the different thicknesses of the seams in the same coal-fields, and to the great difference that obtains in localities removed from each other.

That the land has progressively risen, and as progressively extended, its geological features place beyond a doubt; and, therefore, in addition to the two forces to which we have referred, there was also the gradual increase of the land upon the water, and its consequent displacement, and the consolidation of the matter, as it increased in bulk, all of which operations would tend to the conditions we have proposed; but if these be not deemed sufficient to account for the alternate gain of the water on the land, and the land on the water, the influence of gravitation, which gradually increased, and to which we shall have occasion to refer hereafter, will relieve us of all difficulty in accounting for these phenomena.

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THE BEST MODE OF MINING.

Bristol and Exeter Railway.—It appears from the statement of the accounts of this company to the 31st Dec. last, that 2991,900*l.* had been received as capital account, including 1054,974*l.* on debentures and 72,210*l.* on loan and the expenditure on the main line and branches 2600,356*l.*, including 547*l.* expended during the last half-year, leaving a balance of 881,574*l.* of which 300,000*l.* is invested in South Devon Railway shares, 16,875*l.* in Cornwall Railway shares, 7500*l.* in the Plymouth and Great Western Dock shares, 28,887*l.* in shares of the Exeter and Crediton and the Taw Vale Railways, the Glastonbury Canal, leaving a balance in hand of 28,910*l.* The revenue account for the half-year ending the 31st Dec. last, shows that 119,147*l.* had been received and 49,217*l.* expended, including 4131*l.* for passenger duty and 77*l.* rates and taxes, leaving a balance of 69,924*l.* to which is added 3565*l.* returned from last account, and 298*l.* interest from bankers and shareholders, making the total 70,587*l.* From this sum is deducted 24,814*l.* interest on debentures, 1178*l.* on loan notes, 408*l.* on temporary loans, and 249*l.* on other securities, amounting in the whole to 26,740*l.*, leaving a disposable balance of 43,847*l.* This sum would allow of a dividend at the rate of 23 per cent. on the capital stock of the company for the half-year, leaving a balance of 2142*l.*

In reply to Mr. Ennor's communication of 29th January, allow me to state that Great St. George was the *first* mine I ventured in, with Capes and Messrs. Williams. During my visits there and to Wheel Leisau I saw many granite, *unless the great clean course to the south is construed*. They have sold, by "Moderator's" account, half a million's worth of granite; now, if Mr. Ennor, or either of the agents, can state that any considerable portion of it came from near a junction with granite strata, I must, give in. He can probably convince me himself; for, if I am mistaken, we met there many years ago, he being a near relation to one of the owners. Upon the north-west, at Cligga Point, the granite (*found by miners*) abuts against the slate on the east, in the manner of a dyke, *very* thin; how much I have not the means of knowing. All the rest of the county; both mines may go deeper than Great Wheel Town, and the granite is thin. In this narrow slip of the county it would be difficult to find rich lodes many miles from the run of the four distinct masses of granite in Land's End and Dartmoor—a mile or two would be more "distasteful"; therefore, allowing Cligga Point to be a mere patch of granite, there is at least four miles to fly from Bodruth to either of the towns mentioned. Mr. Ennor's experience extending so much further than

The members of the Ormskirk Literary and Scientific Institution have annually chosen Dr. Muspratt, of the Liverpool College of Chemistry, as their president.



THE MINING JOURNAL.

A Compendium of British Mining.

BY J. Y. WATSON, ESQ., F.G.S.

DEVONSHIRE GREAT CONSOLIDATED COPPER MINES, NEAR TAVISTOCK (IN THE EASTERN DISTRICT).

This sett consists of Wheal Maria, Wheal Fanny, Wheal Anna Maria, Wheal Josiah, Wheal Emma, Wheal Fremontor, and Wheal Thomas. The five first are on the same lode; at Wheal Fremontor an adit is being driven from the Tamar, to intersect parallel lodes; while at Wheal Thomas, on the southern part of the sett, a shaft has been sunk to the depth of 40 fms., and a level driven therefrom, with a view of proving the ground in that direction.

The company is registered under the Joint-Stock Companies' Act, 7 and 8 Vic., cap. 110, and is divided into 1024 shares—12 per share paid up; present market value about 285*l.* per share, and paying dividends varying from 6*l.* to 8*l.* per share every two months, or from 36*l.* to 48*l.* per annum. Managed by a board of directors in London—viz.:

Chairman—W. A. Thomas, Esq.
H. S. Gard, Esq. | Thomas, Morris Esq.
Francis Morris, Esq. | John Thomas, Esq.
Secretary—Mr. A. Allen.
Office—17, Barge-yard Chambers, Bucklersbury.
Managing Director at the Mines—Thomas Morris, Esq.
Consulting Engineer—J. H. Hitchens, Esq., of Tavistock.
Principal Mine Agent—Capt. James Richards.

The mines, 1485 fms. in extent, east and west, on the course of the lodes, are held on lease for 21 years, from the 25th March, 1844, from his Grace the Duke of Bedford, at 1-12th dues. Operations were commenced in August, 1844, and ore first sold in February, 1845. The ore returned from that time, to the end of December, was—

| | Tons c. q. | Amount. | Div. paid. |
|-------|-------------|--------------------------|--------------|
| 1845 | 13,674 12 0 | yielding.. £120,382 14 5 | £55,296 0 0 |
| 1846 | 14,398 9 0 | .. 94,626 17 10 | 37,888 0 0 |
| 1847 | 14,418 6 3 | .. 102,889 12 3 | 15,360 0 0 |
| 1848 | 16,580 17 2 | .. 100,761 14 5 | 30,720 0 0 |
| 1849 | 15,431 18 0 | .. 104,524 1 7 | 34,304 0 0 |
| 1850 | 17,290 15 0 | .. 117,361 12 2 | 40,960 0 0 |
| Total | 91,789 15 1 | £640,646 12 8 | £214,528 0 0 |

A dividend of 7*l.* per share was also paid last month, and another will be payable in March, both out of profits from the ores sampled to the end of 1850, leaving a large reserve fund in hand as a working capital.

The present returns, which are about 1500 tons per month, and yielding from 9000*l.* to 10,000*l.*, are made at a total cost of 5000*l.* to 6000*l.*. The principal operations have been at Wheal Maria, the first mine discovered, and upon which an outlay of 1000*l.* yielded the shareholders 55,206*l.* profits the first year. At this mine there are two shafts, the engine-shaft being sunk 110 fms. At Wheal Fanny, now yielding large returns, there are two shafts—the western one sinking below the 75 fm. level, and the eastern sunk to the 65 fm. level. At Anna Maria Mine, also making returns, the engine-shaft is sunk to the 80 fm. level. At Wheal Josiah, now the richest mine in the lot, there are two shafts—Hitchens', down to 110 fms., and Richards', sinking below the 115 fm. level. At Wheal Emma, on the eastern part of the sett, there is an engine-shaft sinking on the course of the lode, and also an inclined shaft. The machinery, which is very extensive and efficient, consists of four steam-engines, water-wheels, grinders, tram-roads, and everything in proportion to the extent of one of the greatest mines in the country.

To the original discovery of Wheal Maria many parties lay claim. I have heard at least half-a-dozen gentlemen say they could have had the mine years ago; and it seems strange, if such were the case, all the lynx-eyed miners of Cornwall and Devon (who, in many cases, can see through fathoms of ground) should have missed the richest almost exposed to view, and they should have fallen into the hands of five gentlemen in London. The mines are situated in the midst of some of the most gorgeous scenery in Devon, on high ground, near the banks of the River Tamar, and surrounded on all sides by beautiful woods, in which the late Duke of Bedford preserved his pheasants—in fact, where the engines and other works of the mine now stand, was preserved ground; and the late duke granted permission, many years ago, to an old miner, to sink a pit there and search for mineral; and he got down several fathoms, when the duke, finding his pheasants disturbed, ordered him to desist, and ever after refused to grant a lease for mining purposes.

Mr. Hitchens, the late manager, believing the ground presented good geological features, and having a presentiment of success, joined the present directors, Messrs. William A. Thomas and R. S. Gard, who, after a time, obtained a lease for 21 years from the present duke, and undertook to lay out 10,000*l.* in exploring it. In the latter part of 1844 operations were commenced, by clearing out the very pit sunk by the old miner; and, before 200*l.* were spent, a vein of copper was found 20 fms. from the surface, worth 300*l.* per fm.; and, as will be found in the statistical account, in the first 12 months 55,206*l.* were divided as profit among the few proprietors. What can better show the uncertainty of mining, and the enormous sums realised by one lucky hit? Had the poor old miner been allowed by the late duke to sink his pit 12 ft. deeper, he would have found these riches, which have, in little more than three years, yielded the present duke a rental (for a few acres of wood land) of upwards of 40,000*l.*, and are likely to pay him 10,000*l.* a year for the length of the lease.

The neighbouring mines of Maria may be dismissed in a few words. West Maria has stopped, and of those remaining none have come to any profitable result, or realised the expectations formed of them, and would lead us to the belief that the riches of Maria are a large deposit of mineral, formed by the junction of several veins, which are again split up west by the rocks of Capel Tor. Of the mines alluded to, there are to the west Wheal Fortescue, South Maria, Wheal Williams, and Lamheroe, and East Josiah to the east, and in which it is said a good gossan lode, similar to that discovered at Wheal Josiah, has been seen.

CHYANDOUR SMELTING WORKS.—A model of the tin smelting works at Chyandour has been completed under the superintendence of Messrs. Bolitho, for the Great Exhibition. It is made on the scale of an inch to a foot, and will be accompanied by an explanation of the various processes by which the rough tin ore is converted into refined tin. It will, therefore, be doubtless an object of much interest.

FIRE AT WHEAL TREHANE.—On Wednesday morning, the drying-house was discovered to be in flames, or rather to be consumed, having caught fire some time during the night. It originated, it is supposed, by the pipe becoming sufficiently hot to ignite the canvas jackets thrown on it to dry. About 50*l.* worth of miners' underground, and other garments, it is estimated, were destroyed, subjecting the poor fellows to loss and inconvenience; many being obliged to return from their work in their underground dress.

GAS FROM SOAP-SUDS.—It had long been known that the soap-suds, or scouring waters resulting from the cleansing of woollen goods, contains gas of great illuminating power; but the merit of applying it to useful purposes belongs to M. Jeanneroy, who has just fitted up a gas factory for this purpose in the establishment of Messrs. Schwartz and Co., Mulhausen. The residuum from the scouring waters is mixed, after being strained, with quick lime, made into a paste, dried, and distilled in retorts in the same manner as coal.

IMPORTANT TO IRONMASTERS.—In the paragraph we quoted last week from the *Swansea Herald*, referring to some proceedings at the Cefn Cwae Iron-Works, which, it was said, were "without a parallel in the annals of furnace management"—the writer, a correspondent remarks, "should rather have said 'without its parallel in mis-management.' The time the blast was off the furnace is correct, not so as regards the lump, which was about 30 tons, not 60, and composed principally of coke, forge, and furnace cinders, as the proprietor's pecuniary embarrassment prevented his obtaining either ironstone, black-band, or limestone. The leviathan ironmasters would crack their sides with laughter at the sapient announcement, as it is well known that a lump of such material could be easily fused. Instead of the iron being, as stated, 3 inches above the dam-plate, it was at least 3 inches below it, and at the time the paragraph in question was written, it must have been at least 15 in. higher than at first! Would your informant state what has become of the iron contained in the black-band consumed? Only about 12 tons had come out of the furnace up to Saturday last. The consumption of materials for last week—Barrows of coke about 600; black-band, ditto 180 tons; limestone, ditto 150 tons. The result of this was about 2 tons of pig iron! This certainly is without its parallel in furnace management."

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—There is no change to notice in Field's engine-shaft, sinking under the 80 fm. level, nor in the 80 fm. level driving east of old shaft. The lode in the 70 fm. level is 10 ft. wide, 6 ft. of the north part is worth for copper 70*l.* per fm., the remaining 4 ft. of the south is principally capel. The stopes over this level are quite as good as reported last week, and the tribute pitches continue good. Wyld's shaft is sunk 5 feet under the 60 fm. level. The Oak Tree lode in the 10 fm. level, east of Wyld's shaft, is 2 ft. wide, containing gossan, munda, and spar—on the whole, we consider it has a promising appearance. The north lode in the adit level, driving west of the engine-shaft, is 1 ft. wide, and contains munda, iron, and some spots of yellow copper ore.

APPLEDORE (SILVER-LEAD).—During the past week the men have been employed in opening on the back of the western lode, about 50 fms. south of any former working; the lode in this place is about 2 ft. wide, composed of gossan, quartz, munda, and flooken, of a most promising character. They have also diverted a stream of water from the back of No. 2 lode, so that we shall in a few days be in a position to lay open this lode also, as well as No. 3 lode. Suffice it to say for the present that, as far as I can judge, there is every appearance of its becoming a productive mine.

BEDFORD UNITED.—In driving east from the engine-shaft, in the 115 fm. level, the lode is nearly 3 ft. wide, and producing fine stones of ore, with other promising indications; in the same level, east of Andrew's winze, the lode is 4 ft. wide, composed of fluor-spar and munda, with very good stones of ore; it is a strong promising lode, and there is every appearance of our being close to a course of ore; in the western end, in this level, the lode is yielding saving work, and is in an improving state. In the eastern end, in the 103 fm. level, the lode continues to be worth 10 tons of ore per fm.; we have about 3 fms. to drive to get under Arscott's winze. In Arscott's winze the lode is worth 12 tons of ore per fm. for the length of the winze; in the eastern end of the winze there is a very fine lode; in the western end it is not so good, and there is a foot or two of poorish ground between the ends. In the 90 fm. level east the lode is yielding good stones of ore, and although not rich, is otherwise kindly and promising. In the 80 fm. level we are cutting through the capels, but have not yet reached the main part of the lode; the capels are spotted with ore. The ground in the 47 cross-cut, towards the Tavistock lode, is more favourable for driving, and we expect the present end is not far from the lode. The pitches generally are looking very well, and the mine altogether is in a very healthy and satisfactory state.

Feb. 19.—The lode in the 115 fm. level, east of the engine-shaft, is 3 feet wide, composed of fluor-spar and munda, with very good stones of ore; in this level, east of Andrew's winze, the lode is 3 ft. wide, producing a little saving work. The lode in the 103 fathom level east is 4 feet wide, and will still yield 10 tons of ore per fm.; in Parker's winze in this level there has been no lode taken down. In the 90 fathom level east the lode is a little more promising, producing black and yellow ore, saving work; the lode in Arscott's winze in this level is 3 ft. wide, and will yield from 12 to 14 tons of ore per fm. We continue to drive by the side of the lode in the 80 fm. level. There is no alteration in the 47 fm. level west.

BODMIN CONSOLS.—The 13 fathom level north continues in ore ground, yielding at least a ton of lead ore per fm., worth 18*l.*; this end is driving by eight men with every expedition, at 4*l.* 4s. per fathom. The stopes in the back of the adit, 60 fms. north of the end, referred to above, are yielding about 14 tons of lead ore to the fm. The shaft is down to the 25 fm. level; the cross-cut is let at 3*l.* 15s. per fm.

BODMIN WHEAL MARY.—The eleven-course running through the shaft has retarded our sinking; the ground is now favourable again. No. 1 lode appears to be holed by the slide between the adit and the 10 fm. level. The mine is generally as last reported, the tributaries earning fair wages. We shall raise copper ore this month, value from 100*l.* to 150*l.*. In No. 3 lode in the 10 fm. level we may shortly expect to make a discovery of some importance, as we have only about 7 fms. to drive before we shall be under the most ore part of the lode. The large engine will be ready to go to work in three weeks if required.

BORRINGTON PARK.—Since my last weekly report, the adit has been driven about 6 fms.; the lode is large, and has a splendid appearance; it is composed of flooken, munda, and spar, with good rocks of lead; and it is my firm opinion that the mine will, ere long, be classed amongst the dividend-paying mines. The smiths' shop will be completed this week.

BUTTERDON.—The cross-cut in the 30 fm. level is extended 8 fms. west of the engine-shaft. From the underlay of the lode in the trial shaft, which was sunk 6 fms. from the surface on course, I calculated on cutting it by driving 5 or 6 fms.; but having to do the making very regular, and of very encouraging appearance. The lode we met north in the cross-cut, about 4 fms. west of the shaft, had displaced the lode (a similar case occurs in the north part of Trelawny Mine). The slide was also seen in the bottom of the shaft, where I ordered the men to cut through it, and where the lode is met with from 4 to 5 ft. wide, composed principally of horn-spar and prian, of a very promising character, but no ore, which I am not disappointed at, it being so near the slide. The men are now extending northward on its course, and I hope soon to be able to report favourably.

CARADON VALE.—In visiting this mine, a few days since, I found that the lode was now 5 fms. (or nearly so) north by the cross-course; this, I think, will be the case at the next level also. The end driving east is on a small branch, a mere fracture of the lode; but the main part is holed off, which can be seen at about 10 fms. from shaft in the cross-cut; however, I would not advise anything to be done at this level, but confine your operations to sinking shaft. Of course, it was quite right with your captain in cross-cutting at the present level; but now, having seen the result, there is a rule to guide you in the next level, where I would recommend to cross-cut the lode, and extend away your levels both east and west, as it is reasonable to expect disordered ground a few fms. about the cross-course. The strata is very congenial for copper, none can be better, and I am inclined to believe that at the next level you will find a great improvement in the lode. The present level west is drove on a similar fracture, which evidently shows it to be such; it has a south underlay, consequently the shaft would intersect it about the present depth, and the driveage on it corresponds with the above—it dwindles into a mere fibre. I should have recommended your driving on the course of the lode in the present level, but as your shaft will soon be down to the 48 ft. level, I should say it would be more practicable to drive the deepest level, when it is likely you will have good lode.

Feb. 11.—The shaft is now being sunk by twelve men (six shaftmen and six labourers), three of the latter being additional, in consequence of the shaft being so much deeper; they are required for winding up the stuff. The present price per fm. is 11*l.*, and at this price it is necessary for them to sink 6 ft. per week to earn wages. I am happy to say the ground is much easier than at the setting, so their progress will be proportionately greater. I expect, by the time this reaches you, they will be down about 15 fms. 2 ft. Two men are employed in driving north, to cut the main part of the lode west of the cross-course, which I consider a highly desirable object, and they are progressing very satisfactorily. The present price is 3*l.* 10s. per fm. Our present operations being so very limited, although of much importance, precludes me from a more detailed report. There is one important point that I wish to call your attention to—the north and south lodes will come together at the 40; and between this and this day two months, the lode, as united, will be intersected in the 48 fm. level, when, judging from the highly mineralised strata and the appearance of the country, we expect great improvement.

CARTHEW CONSOLS.—The ground in each end in the 85 fm. level continues very easy, and in sinking north, the lode and the side are found to be diverging, the former making very regular, and of very encouraging appearance. The lode in the north end of the 75 fathom level is very rich in lead and copper; here we are opening exceedingly good tribute ground, the best probably we have ever yet opened; the lode in the south end in this level shows very well. Of the 65 fm. level end south we have very flattering expectations, being only 2 or 3 fathoms behind the long bunch of ore gone down in the level above, which is 40 fms. or upwards in length. The tribute pitches show exceedingly well, especially those two in the bottom of the 65 fm. level north.

DEVON AND COURTENAY.—I have put some men to clear the wood, and to level the ground, preparatory to the sinking the engine shaft for the development of the lodes in the western ground, and in a few days I shall be prepared for the letting it, which I hope will be sunk with the greatest possible dispatch, for I am very anxious to see the lodes in this part of the mine laid open, being very sanguine as to the result. I have also put some men to clear the copper for the cutting the lobe; that will be also ready in a few days for letting. There is no material alteration in the 60 fm. level this week; the west end is 24 fathoms behind the 40 west, and until we approach that point, I do not expect any great improvement. The lode in the 40 fm. level will now produce 2 tons of ore per fm., and I think, from the present indications, it will improve. The ground in the 30 fm. level is easier, and I hope soon to see that the end is as good, or better, than in the 40. The stone of ore assayed by Mr. Gully produced 30*l.*; this is very rich, and I fancy those coated with grey ore will make a much higher produce.

EAST CROWDALE.—In stopping the side of the 40 fm. level, we find the bunch of tin extending west; we have it full 6 fms. in length, and still holding good. The tiny part is from 5 to 6 feet wide, all good saving work. The 40 end east is not so good as when last reported on, but still tinny. In the 50 end east the lode is large, well-defined, and producing some tin, and I hope ere long to be able to report that we have reached the point of the lengthening bunch of tin going down from the level above. The winze from the 28 to the 40 was communicated on Tuesday, the 11th inst., and next week we shall put on more men, stopping the back of the 40 fm. level. We purpose sampling November and December tin next week—weight computed 12 tons; and, from present prospects, I am confident that our future samplings will increase rapidly. We have suspended sinking in the bottom of the 40, in consequence of the water being too quick; therefore we must wait until the 50 is further ahead. Our pitches in the upper levels are poor generally.

EAST GUNNIS LAKE.—In consequence of the late heavy and continued rains, we have not made so much progress in cutting down the shaft, and clearing the particular drivages in the 16 fm. level, as we anticipated. The shaft is now, however, cleared for 3 fms. below the 16 fm. level, and the men are now engaged in cutting it down, and preparing to fix a standing lift, which we find it will be necessary to do before proceeding to enlarge the shaft, down to the 24 fm. level. The 16 fm. level, on the course of the north lode, has been cleared for about 30 fms. east of the engine-shaft; the lode has been principally taken away, both in the back and bottom of the level. In some places where it is still standing, it is about 2 ft. wide, composed of spar, munda, and ore, and we hope to reach the end very shortly. The cross-cut south has been cleared past the middle lode, and home to the south end, and at the near the point of intersection by the cross-cut, appears to have been very productive, and it has been nearly all taken away in the back of the level; east of the cross-cut the level is still full of atle, and we cannot, therefore, say how far it has been extended in this direction; the western end is but a few fathoms from the cross-cut. This (the middle lode) forms a junction with the north lode at about 35 fms. west of the cross-cut. The driveage west on the course of the south lode has been cleared for 25 fms., and home to the end; the lode is still standing, and is from 2 to 3 ft. wide, but with a slight underlay, and composed of gossan, prian, and fluor-spar, with some ore, and on the whole may be justly considered as a most kindly and promising lode. The driveage eastward has been cleared about 6 or 7 fms., and home to a small shaft, about which the ground has been nearly all taken away. There has been nothing done, I believe, on either of these lodes below the 16 fm. level, and from their very promising appearances at such a shallow depth, there is every reason to expect that they will be highly productive and profitable at the next level. On the whole, considering the character of these lodes, and comparing it with that of others immediately adjoining, and traversing the same channel of ground, and which are known to have produced large quantities of rich ore, I cannot but entertain a strong opinion that, on their further development at a greater depth, we shall find them to be equally productive and profitable, and we have reason to believe there is every prospect of having a good and lasting mine.

EAST LEISURE.—The 10 fm. level west, on the north lode, is improving, and now yields 2 tons of ore per fm. There is also a good branch of ore in the 17, coming towards it from the engine-shaft; this bunch of ore is the same as seen in the adit

and winze, and dips fast west. The same thing occurs on the south lode, where a winze from adit is producing 5 tons per fm. The ore ground will probably soon be entered by the level driving west in the 10.

Feb. 14.—Jewell's engine-shaft is cut open 84 fathoms below the 17 fathom level, and the lode, which here enters the shaft, is larger and more promising than above, producing good stones of ore; the 17 fathom level has passed through a short bunch of ore, but is, at present, disordered. The 10 fathom level, west on the north lode, is producing 4 tons of good ore per fm.; ditto, in Taylor's lode, east and west, is 4 ft. wide, rich in jack, spotted with ore, and very promising; three branches were cut before intersecting the lode, one of which will cut out 1 ton of ore per fm. The lode in the winze under the adit level is 6 feet wide, now producing 2 tons of ore per fm. The end of the adit level west will yield 4 tons of ore per fathom. All the ore ground dips west, which accounts for the 10 fathom level not having yet reached the run of ore seen in the adit. There is a good pile of work at surface, and preparations are being made for dressing it.

EAST SHARP TOR.—The shaftmen are progressing with the work, named in my last, very satisfactorily. I hope by the time stated we shall commence sinking diagonally. The water is as named in my last.

EAST TAMAR CONSOLS.—Since my last report, a slight improvement has taken place in the lode in the 60 and 70 fm. levels, north of Fursehill, and both the ends are letting down a good deal of water, so that we have reason to expect that we shall soon drain Goult's shaft, and a long run of good ore ground towards Whisson. The lode also in the 26 end, north of Church-lane shaft, is improved for lead ore, yielding at present 8 cwt. per fm.; in other places there is no material alteration. We are already experiencing the good effects of the favourable change in the weather. The water is decreasing at Gullett's, and we expect to fork the shaft by the end of this week, and hope to resume sinking Caroline's in a few days.

EAST WHEAL REETH.—The following report, from Capt. Wm. Bargan, has just been received, who was desired to inspect the mine:—East Wheal Reeth, in the parish of Lelant, Cornwall, joining sets with the Great Wheal Reeth Tin Mine. In the engine lode, which is a caunter, the bottom is in the 24 fm. level, driven south about 25 fms. by the old workers. Operations are commenced here to continue the lode to cut the Great Wheal Reeth north lode and Carbons lode, when, after extending 10 or 12 fms., they expect to find a junction of the two lodes. This is a most important point to be obtained, as there is an excellent course of tin gone down under the adit level on these lodes. I should here state, that Great Wheal Reeth north lode and Carbons are east and west lodes. The 24 fm. level north cannot be seen more than 2 fms. from the shaft, by means of a choke, which I would recommend to be cleared away as soon as possible, as the lode here is about 1 ft. wide, producing very good work for tin, and likely to improve further north—price for driving this end, 4*l.* 10s. per fm. The 10 fm. level, north of engine-shaft, is driven 12 fms.; there is a good lode here, 18 in. wide, worth 10*l.* per fm. for tin. This level is going under and within about 10 fms. of Goult's bottom, where, in the adit level, there is a fine course of tin discovered, giving every reason to expect an abundance of mineral when the level reaches Goult's bottom, a place well known for its natural production of tin—price for driving here, 5*l.* 10s. per fm. I have carefully examined the sett, and from the appearance underground, winze, four good lodes, and the locality, being surrounded by mines of no ordinary standing, I believe this to be a valuable piece of ground, and I can with confidence recommend it as a good speculation.

EAST WHEAL RUSSELL.—We have cleared our adit level 20 fms. east of Hitchens' shaft, the lode has the same promising appearance at the furthest point we have seen, as I have stated in my former reports, producing gossan, quartz, munda, and capel of the finest quality. We started our engine on Tuesday, which went off satisfactorily, so we have resumed sinking our engine-shaft, which will, I hope, go down with rapid progress, when I also hope the results will be favourable. I expect to give you in my next report something new at our deepest point of development. I am also happy to say that the engine works beautifully, and keeps the coming water at about 2 strokes per minute, of 3 strokes only, so that now we shall be again getting on satisfactorily with the sinking of the shaft. We have set the men to sink the shaft 6 fms., at 6*l.* per fm., which will show the easy and expeditious character of the works.

ESGAR LEE.—We are still driving north of the deep adit, but have not yet cut the north lode. The lode in the 12 fm. level, east of Morgan's winze, is improved since my last, being less gossan, with an increase of ore. The lode in the stopes, on an average, is looking quite as well as when last reported; in fact, the lode in the two stopes in back of the deep adit, of Owen's winze, is much improved during the past week. Having been favoured for the last few days with fine weather, we have made good progress on the dressing floors; and on Friday, the 14th inst., we shipped the 20 tons of ore sold to Messrs. Walker, Parker, and Co., to be delivered to them at Dee Bank, at 5s. per ton freight.

EXMOR ELIZA.—In submitting to your attention our operations since our last general meeting, held at South Molton, Dec. 17, I beg to state as a reason for our not sinking with that progress which was at first anticipated, that the ground in the shaft, although not hard, has been more difficult and troublesome than was at first supposed, during the last 4 fms. especially; nevertheless, the shaft being 10 fms. 3 ft. below the 24 fm. level, I hope to cut the middle lode in the 36 fm. level before the next general meeting; and, judging from the splendid indications seen in the 24 fm. level, on the lodes and branches, there can be but little doubt that copper will be met with in large quantities when they are properly laid open. Two men have been employed driving west on a branch from the cross-cut in the 24 fm. level, between the middle and north lodes, and have driven 2 fms. 3 ft., from which the splendid specimens of copper ore now produced were taken. Two men are now rising in the back of the 12 fm. level, on the lode, to ventilate the mine and make another footway. Although we have had much rain, the engine will keep the water running about five strokes per minute, but, if required, will run 10; therefore, we have nothing to fear, having our machinery in good order.

GREAT SHEBA CONSOLS.—The north engine-shaft, which is intended to intersect the Sheba main lode at 60 fms., is sunk about 12 fms. in a most beautiful light blue mineralised clay-slate; but is at present suspended on account of the water being so very fast; we expected at the first outset to have sunk this shaft 20 fms., by horse-power, by the time our engine-shaft was erected, so as to commence cross-cutting to the lode to that depth; but, finding the water so very fast that it run down three horses in 24 hours, and no reason to expect it to decrease, I thought it most beneficial to stop the shaft, rather than add another horse, as the expense of horse-hire would be exceedingly high; however, finding that it will take at least three months to get the large wheel in course to work, and that we shall ultimately require a small wheel for stamps, &c., and looking at time as being equal to money in this very important undertaking, I would advise you to erect a small wheel, in such a position that it will at present act for pumping, and when not required for that purpose, connect stamps or crusher to the same—when I say erect a small wheel, I do not mean to build a new one; but there is a 12-ft. wheel, 3 feet breast within the ring, about 4 miles from the mine, and if we can get it for 8*l.* or 10*l.* it would enable us to sink our shaft to the 20—this, I imagine, you will agree with, as the expense would be a mere trifle. I am very anxious to see the shaft sunk to the 20—as well as the lode cut to that depth; if so, it can be done with proper economy, and no waste of capital: an 8-in. lift will be sufficient for this work, which will act on a 7-in. bore, which, with a full supply of water, we can drive with safety 12 strokes per minute; this wheel can be removed and set to work in a week. I pointed out this to Mr. Mathews, your engineer, and he fully agrees therewith: the lift of pumps, of course, will not be large enough for the standing lift after lode cut, but will act for sinking under the 20, therefore, it will not be any waste of capital. In driving the deep adit west of the cross-course, I am happy to state the lode is about 2 ft. wide, with two well-defined walls of a most promising character, composed of very rich gossan, fluor-spar, felspar, large stones of munda, mixed with black and yellow copper, and every appearance of improvement as we drive on. Our stopes in the back of the adit are all producing some rich stones of bright yellow copper, some of which I have the pleasure of laying before you, broken from the lode on the 12th inst.; but being so near the surface, we soon get up to the black oxide of copper; a sample of the same I also have for your inspection, this holds up to a rich mass of gossan, within 3 or 4 fms. to surface; such gossan I never knew to exist on anything but a mass of copper. And, although, I cannot look through the bowels of the earth but by analogy, yet the most extraordinary indications from the surface to the adit, induces me to believe that there is a course of ore. You have before you the real composition of the lode from the surface to the adit—and after examining the same, I feel assured you have no need to ask my opinion. The 20 fm. level, if I judge rightly, will put an end to all supposition as to the value of a rich course of copper. In sinking the engine-shaft, I am happy to state we are got into a splendid clay-slate, equal to any in the county. We are, one and all, both the men and myself, expecting something of importance when we intersect the lode by shaft, which will be about 14 fms. from surface (it is now down about 8 fms.), but the water is so fast that we are obliged to stop sinking. The men are now engaged casing and dividing shaft; however, I think, I can adopt a plan so as to sink to intersect the lode with but little expense, without horse-power or wheel, until the large wheel is in course to work. Our wheel-pit and lobby are completed, within a few days' work, and shall commence building the walls, or put in a frame immediately. The contract for enlarging and completing the count-house, arranged for the sum of 30*l.*; the masons are now engaged building the walls, and I beg to state that every exertion is made to prosecute the work to the best advantage.

HEIGNSTON DOWN CONSOLS.—The lode in the 45 fm. level, east of Doldge's winze, is improved since last reported on. The lode in the 35 fm. level is 3 ft. wide, producing some good saving work, for copper ore, with indications of improvement. The cross-cut south, in this level, is without alteration. The lode in Hitchens' shaft, as also the 35 fm. level, west of same, continues without important alteration.

Feb. 19.—The lode in the 45 fm. level is worth from 3 to 4 tons of good quality ore per fm. The 35 fm. level is without alteration since last reported upon. The cross-cut south is also without alteration. The lode in Hitchens' shaft is from 2 to 3 ft. wide, producing occasional stones of ore. The lode in the 35 fm. level, west of said shaft, is 2 ft. wide, principally gossan and capels, with a small proportion of copper ore.

HOLMBUSH.—The ground in Hitchens' engine-shaft, sinking below the 120 fm. level, is favourable killas, as is also the ground in cutting plat, &c., in the 132; in both places we are pleased at the progress making. The lode in the 132 fathom level, west of the great cross-course, is 15 in. wide, producing 2 tons of copper ore per fathom. The lode in the stopes will produce 4 tons of ore per fm. The flap-jack lode in the 120 fm. level, east of the cross-course, is 18 in. wide, composed of munda, spar, stones of ore, and blende; the rise above this level is communicated to the winze below the 100 fathom level, thereby ventilating both levels, and effecting a saving in the tramming the stuff, air-machine, boys, &c. We shall shortly commence to drive a midway level east of the lode, to get under the eastern winze, where the lode will produce 3 tons of ore per fm. The lode in the 120 fm. level south is 4 ft. wide, producing stones of lead, &c.; in driving west of the lead course, in this level, the copper lode is small in the present end, and we have removed the men, to drive south on the lead branch last intersected, to prove if it has heaved the main part of the lode in that direction; as the main body of the lead lode has heaved the copper lode 16 fms. south, we need not wonder if the branch has heaved it some distance in the same direction; at all events, by so doing, we shall be proving both. The flap-jack lode in the 100 fm. level, west of Wall's engine-shaft, is 3 ft. wide, composed of spar, munda, and stones of ore; the same lode in the 100, east of the lode, is 3 ft. wide, and will produce 3 tons of ore per fm. The men selected to sink Wall's shaft have been, and still are, engaged in Sunday work, to prepare for sinking—such as taking up water, repairing shaft and footway, erecting new pulley, stands, &c., and will next remove the lift, which is resting on the bottom of the shaft.

KESWICK.—At Brandyell, the 10 fm. level rise is worth 18 cwt. of ore to the fm. The stopes in this level are yielding 10 cwt. to the fm. In the Salt sump we have not yet got to work, as the water has been too much for us, owing to the unusual quantity of rain, and the water in the shaft not being sufficiently cleared out to drain the sump without hand pumping. The Salt level side is worth 10 cwt. to the fathom. The Old Brandyell Mine is without alteration. At Thornthwaite, No. 1 stopes, in the 10 fm. level, is worth 10 cwt. of ore to the fm.; No. 2 stopes worth 8 cwt. to the fm. In the bottom level we have not yet got through the hard sparry ground, nor do we expect it for a few fathoms.

LLWYN MALEES.—The 14 fm. level east has some ore in it, and looks promising; the 14 ditto west is in good ore. The stopes (which we commenced yesterday) over the 14 fm. level, west from western winze, look better than I expected; but by next report day I shall be able to say more about them. The plat in the 24 fm. level

MINES AND MINING.—No. VI.

BY EVAN HOPKINS, F.G.S.

The principles of mining and dressing are well known amongst the generality of miners; but the mode in which these principles are applied in practice varies much in different mines. The driving of an adit, and sinking a shaft, &c., are ordinary operations; yet it often happens in one mine we are able to extract the stuff (i.e., the carriage from the ends and stopes) to the surface for about 1s. per ton; whilst in another it costs 6s. per ton, owing to the economy of the arrangements. In one place the stuff is shovelled and barrowed two or three times; in another it is conveyed at once from the ends and stopes, by means of waggons, direct to the spelter-crushers or stamps. In some places the stuff is thrown down from the back stopes to the level, and then shovelled into barrows, thence to the shaft, then shovelled again into the kiddles. The kiddles again drawn up a shaft without divisions, or guides—chains twisting, the kiddles rubbing against the sides of the shaft, which is often zig-zag—causing a great deal of wear and tear, and thus augmenting the cost of extraction; and, if the stuff happens to be of low value, the produce will not meet the cost. Another mine, producing stuff equally low, leaves a surplus, simply by means of a mere economical and systematic arrangement. A system of incline planes, with carriages on rails, and pump-roads in the direction of the shoots of ore, has not only been the saving of some mines, but has rendered them profitable; whilst they were ruinous when carried on according to the common system of perpendicular cross-cuts, kiddles, and driving so many dead levels. Again, in the dressing we find a great difference. The grand point is to separate the ore stuff at the commencement—that is, in the stopes; then make a division for the crushing and stamping-mills. In stamping, take care of the stuff as it runs out from the grates. If the fine stuff is allowed to run away into the slime pits, there is a danger of paying 30 for getting 20 back again. The principle of specific gravity, as applied to the concentration by water, is familiar to all miners; but there is a considerable difference in the mode of carrying that principle into practice. The stuff in one place will cost 3l. per ton for dressing; whilst in another, by a little careful management, the same kind of stuff is dressed for 12 10s. Hence, with the economy introduced underground, and in the dressing on the surface, in connection with a man of business at the head, many poor mines are made to pay; whilst some rich ones are working at a loss.

A prudent mining capitalist never goes to a rich mine for practical advice on the economy of working, &c., because he knows well that natural circumstances are not favourable to the introduction of economy. An ordinary miner may carry on a rich mine, and the world may give him a great deal of credit for what is not due to him. If a man desires to receive good advice in mining economy, he must go to a poor mine which is working at a profit, be that ever so little.

The reason why the mines westward are looking and doing so well, is more owing to the improvements and strict system of economy now introduced, than to the quality of the mineral, or the merits of the mines themselves. These are the points, together with the management by committees of mining men of business, who carefully analyse the cost-sheets monthly, or bi-monthly, that bring mines into a rational and legitimate business.—*Truro, February 20.*

MINING NOTABILLIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

BWLCH CONSOLS.—The different ends driving in this mine are turning out good quantities of ore. Except the tributaries, we have only 12 men stopping. We shall sample 40 tons of ore, and give good profits.

CWM DAREN.—Oliver's level is yielding some beautiful copper ore. The other bargains are worth 6l. per fm. for copper, and 15l. for lead.

BROSFLOYD.—The lode, on stripping down the sides, is worth 15l. per fm. and the other parts of the mine look well.

DAREN.—We sold last week 10 tons of lead, at 15l. per ton. We have dressed 18 tons of copper this month, which we consign to Messrs. Bath and Son; it is of good quality. Francis's adit is worth 20l. per fm., and the stopes yield better than we anticipated.

CWM SEBON.—The water is pumped out by the 60 fm. level; a good course of silver ore holds for a length of 30 fms. in the back of that level. The back of the 50 fm. level eastward, and the 50 end, are in good ore.

ALL-Y-CRIB.—We shall sell 400l. worth of ore this month, at a cost that will leave a good margin of profit. The air shaft yields a ton of ore to the fm., and the stopes and end are in fine courses of ore in the main adit level.

GELLIER-HEIRIN.—The adit has not yet touched the run of the ore ground.

CAE-GYNN.—In cutting the foundation for the wheel-pit, we have discovered one of the finest lodes at the surface I have yet seen in this district, composed of a mixture of lead, gossan, blende, and carbonate of lime. We are stripping down the main lode, the sides of which are worth 10l. per fm. If a fair valuation of this mine were made, according to the appearance, it would not be set down at less than 10,000l.

RHEW-RHIGUS.—The men are opening upon a lode of great promise, full of the sort of mineral that rests upon the best bodies of ore in this country—in durated slate, massive, and full of joints of iron, with strings of lead ore in it.

ESGAR-HIR.—The Welsh Potosi.—The stopes yield 4 tons of solid ore per fm., worth 50l. per fm.

COURT GRANGE.—The bottom level east, at Pen-y-cen, yields some ore, although it is not far enough for the eastern ore ground. The cost last month was about 275l. We sampled 24 tons of ore this month, worth 420l.

LLWYNMALES.—Had it not been for the late heavy floods, ere this we should have had 50 tons for sale. The 8 fm. level looks better, with string of ore in the lode, traced from one side to the other; a splendid bunch will soon be cut in this level. The 14 fm. level is very promising; the 14 fm. level west is in a very good lode. A fine stone of ore has been broken in the 8 fm. level west, but not so good as it will be. Another whinsey must be put up at once; the one we have will not do the work we have on hand.

BOLKOWE.—The lode in the end is now 4 feet wide—a beautiful gossan. The prospects throughout the mine are most cheering.

WHALE GREENVILLE is looking well throughout.

GREAT POLGOOTH.—This mine, near St. Austell, is one of the best tin mines in the county of Cornwall. In addition to the tin lodes, there have been discovered several promising veins of copper. There are on the plant 7 steam-engines, 10 water-wheels, set of stamps for 250 heads; from 700 to 800 persons are employed on the works. The profits for the last four years may be calculated at about 13,000l. From 1846 to end of 1850, the sales of tin amounted to about 90,000l. The mine in the last year may be said to have realised nearly 2000l. per month. Although this mine has long been worked, there are several portions of the sett which may be considered as virgin ground, especially at Boskilling and Poldice. If adequate capital is laid out in the exploration of the ground, there can be no doubt that, according to general experience, several other lodes would be opened. The discovery of a good course of tin at any one point (and these in Polgooth are generally unfailing at each intersection), would so add to the returns as to place a large available profit at the disposal of the proprietors. The increased consumption of tin, and the improved prices which may be expected, cannot but render this property of great value at the present time. The tributes for the last five years have been about 6s. 6d. in 1l. The mine, free from all liabilities, is now divided into 11,000 shares, with a working capital of 5000l. in hand. The last month's tin was of the value of about 1900l., leaving a surplus of about 300l. We understand that the shares proposed to be disposed of are more than all applied for by influential parties.

FRANK CONSOLS.—This mine is now commencing to be worked vigorously by the new company, and more men will be put on next week to clear up the levels and lay open the lodes, preparatory to the erection of steam-power. Capt. W. Burgen says—"There is one pair of men working at the adit level, driven west 2 fms., price 4l. 10s. per fathom. I cannot recommend driving this end farther west, but to come back and commence sinking by the side of the lode without delay. I do not think the water would be an obstacle, as, perhaps, it might be kept by a force pump. I also think 5 fathoms may be put down here for about 7l. per fathom, unless they have more water than calculated upon. I should also recommend clearing the adit at the north part of the sett, to get at the east and west lodes; there, we are told, are good courses of tin gone down in the bottom of the adit formerly worked upon, and yielding good returns to the old miners."

WEST GOGINAN (silver-lead).—This sett extends over a distance of 600 fms. on the course of the lode, four of which have been discovered from 3 to 5 feet wide. One of the middle lodes has been sunk about 14 fathoms, and levels driven on about 20 fms., showing killas, spar, blende, and rich strings of silver-lead ore, being 5 ft. wide; the extreme distance between the lodes is 80 fms., and the ground of a favourable character for driving, congenial for silver-lead ore. The lodes of the Goginan Mine run through the whole of this sett, and joins it immediately on the east, and in the neighbourhood are the Cwm-synlog, Cwm Sebon, Cwm Eryn, Daren, and other rich dividend-paying mines. Looking at the relative position of this property, the facility of carriage, and the promising character of the lodes, West Goginan may be expected, ere long, to fully sustain the character of the district.

SPEARNE CONSOLS.—We have a splendid discovery in the 116 fm. level end west from the Guide shaft; this level has been rich for tin for upwards of 30 fms. driving, and there is an excellent course of tin going down in the bottoms for all that length; also the 128 fm. level, which is driving west, has been daily improving; and in this end the men have had a very good course of tin, and expect shortly to come under the tin as mentioned in the 116 fm. level—in fact, the mine throughout never looked better; and, from what I can learn, the next account is fixed for Friday, the 7th of March, when a good dividend is expected; and it will be a two months' account.

EAST WHEEL JOSIAH.—The men have nearly completed timbering the adit level south, and will commence driving in the course of a day or two.

WHEEL HARRIS.—We have, as you requested, inspected this mine, which is in the parish of Lifton, and the sett is a very extensive one. We find, not far from the centre of this sett, a shaft has been sunk; and at 13 fms. from surface a large north and south lode, underlying east, was cut through; and from the bottom of this shaft, which is 27 fms. deep, a cross-cut is driven several fathoms south-west, and intersected a lode, running about east and west; this lode is driven on in the same level 15 fms., which in places is about 30 in. wide, composed chiefly of spar, with some bands, spots of copper, and good stones of lead. The ground throughout the present workings is a dark clay-slate, and easy for working, but is disordered by slide courses. We have a favourable opinion of the north and south lode above referred to, and would, therefore, recommend that the 27 fm. level be driven east to cut it, which will be at the same time proving the east and west course; or a cross-cut can be driven east from the shaft, which would reach it at a less distance.

Feb. 18.—The men have secured the 25 fathom level west, and driven through the cross-course, but not discovered the lode to the west of it as yet, but expect to in the course of a day or two; in the same level east the lode is split in three parts, with horses of killas. Each of these parts is about 4 in. wide, producing spots or stones of lead, and copper ore occasionally.

MINING APPOINTMENTS DURING FEBRUARY.

22. Pay at Great Consols, Comfort, Trevelick, Tywarthayle, Agar, West Seton, Pen-darves, Wheel Seton, West Alfred, and Copper Bottom; setting at Levant Mine.
25. North Pool account, on the mine.
26. Carn Brea and other mines sampling.
27. Ticketing at Lendoy's Hotel, Truro—United and other mines.
28. Pay at Carn Brea, Tincroft, North Pool, East Pool, Wheel Ellen, Treleigh, South Tolgas, and Great Wheel Alfred; setting at East Croft.

IMPROVEMENTS IN COATING AND IMPREGNATING METALS AND METALLIC ARTICLES.

Mr. Joseph Steele has just enrolled the specification of his patent for coating and impregnating metals and metallic articles, which he describes in his "claim" to be—1. With a solution composed of the different ingredients mentioned (whose proportions may, however, be slightly varied), and worked in conjunction with a current of electricity, so as to give to such metals or metallic articles the appearance of tin. The bath alluded to is composed as follows:—75 gallons of distilled water are placed in a non-metallic trough, and heated by steam to about 150° Fahr. above the common temperature; 60 lbs. of common soda are dissolved in a separate vessel with some of the hot distilled water, and strained through a hair sieve into the trough; 15 lbs. of Russian or American potash are next dissolved in some of the warm solution, and strained through a sieve into the trough, after which there is added 5 lbs. of caustic potash, also previously dissolved in some of the warm liquor of the bath; 2 ozs. of cyanide of potassium, 2 ozs. of acetate of zinc (dissolved separately in some of the warm solution), and 16 lbs. of bi-oxide of tin, complete the bath, which will be ready for use when it has stood for two or three hours. If a crust or dirt should rise, more alkali must be added, and if the bath should assume a reddish tinge, sulphate of zinc. The articles to be coated are immersed in the bath at a heat of 250° above the ordinary temperature, care being taken that they are previously well cleaned. One pole of an electric battery is to be in connection with the article, and the other with an electrode of pure tin, or zinc, suspended in the solution. The former is preferred, as it gives a whiter deposit.

2. The coating of metals and metallic articles with a solution of brass and copper in conjunction with a current of electricity, and the giving to their surfaces, when coated with either of these solutions, a coat of bronze, as described. This bath is composed of six gallons of distilled water, heated as before; 2½ lbs. American potash, dissolved separately in some of the water, and passed through a sieve into the bath; 2½ ozs. of powdered acetate of copper, mixed separately with half a pint of strong spirits of ammonia, 4 to 5 ozs. of sulphate of zinc, and 2 ozs. of cyanide of potassium. This bath is ready for immediate use, but it is preferred to allow it to remain quiescent for three or four days. The sulphate of zinc is omitted from the copper bath. The articles to be immersed must be previously well cleaned from grease and dirt. The battery which the patentee prefers is that known in Belgium and France as the "Maheux battery." A brown bronze for articles coated with either the brass or copper solution, is composed of three-fourths of a pint of water, the same quantity of sulphuretted ammonia, 2 ozs. of red colouring matter, with French chalk and black-lead, according to the colour required, mixed up like paint, and applied with a brush. For green bronze, like quantities of water, sulphuretted ammonia, and Prussian blue and chrome yellow, at the discretion of the operator.

3. The coating of metals and metallic articles with gold, in conjunction with a small electrode of zinc or copper, to give to such metals and metallic articles the appearance of gold. This process is conducted as follows:—1 oz. of gold is dissolved in 8 ozs. of nitric acid and 4 ozs. of hydrochloric acid over a spirit lamp, and heat is applied until the acids have evaporated; 24 ozs. of prussiate of potash, and 12 ozs. of carbonate of potash, are placed by degrees in a red-hot crucible, and when melted, poured into an open earthenware dish. The vitrified potashes are then boiled for about 5 minutes, with two to three gallons of water, in an enamelled iron pot. This mixture is next filtered, and the filtered water used to wash out all the dissolved gold from the vessel in which it was placed; the whole is then boiled for about 15 minutes, and again filtered. The articles to be coated are immersed in this liquor at 20° to 25° Fahr. above the ordinary temperature, in contact with an electrode of zinc or copper, by which the deposition is effected. If a darker colour than that of pure gold be required, it may be obtained by dissolving with the gold a few dwts. of copper.

4. The coating of metals and metallic articles with silver, in conjunction with a small electrode of zinc, for giving to such metals or metallic articles the appearance of silver. In carrying this part of the invention into effect, it is preferred to dissolve over a spirit lamp 4 ozs. of silver in 20 ozs. of nitric acid; 1½ lbs. of muriate of sodium (query? soda)—common salt, is dissolved in a gallon and a half of water, and added to the silver solution. When the silver is precipitated, the liquor must be poured off, and the precipitate washed till free from the salt and acid. A solution of prussiate and carbonate of potash, as in the preceding case, is then prepared, and the silver precipitate boiled in it for about 15 minutes. After filtration, the articles to be coated are immersed in this bath, in contact with an electrode or strip of zinc, and deposition ensues, as in the preceding instance.

TENACITY OF METALS.—Mr. Baudrimont, after numerous experiments, has arrived at some very interesting conclusions, which may probably eventually prove of much importance to the arts. He has discovered the varying tenacity of different metals in proportion to their temperatures: it generally decreases, though not without exception, as the temperature rises. With silver the tenacity diminishes more rapidly than the temperature; but with copper, gold, platinum, and palladium, it decreases less rapidly than the temperature. Iron presents a very peculiar and remarkable property, at 212° Fahr.: its tenacity is less than at 32°, but at 392° its tenacity is greater than at 32°.

WHEEL REETH.—In last week's Journal we gave the particulars of the cause Harvey v. Higgins, which had been argued in the Stannaries Court. The Vice-Warden has decided that payment of the debt be made on or before 25th March.

DIAMONDS IN THE BRAZILS.—Letters from Rio Janeiro, dated 4th Jan., state that diamonds have lately been extracted again from the mines called "Riven et Caithé," in Minas. Amongst them was one weighing 291 grains, which was sent to England by the *Linnet* packet. The stones are very similar to those from Cuiaba, but much more crystallized. A great many persons had congregated in the search.

CALIFORNIA.—The steamer *Empire City* arrived at New York on the 7th inst. with the California mails, \$750,000 in gold dust on freight, \$300,000 in the hands of passengers. The accounts are not so encouraging as formerly: the mines were yielding less than during the past season, but preparations were making to work the quartz mines during the coming spring and summer with great energy, by the aid of machinery and steam. The Indians in the Mariposa country had commenced depredations, but efforts were being made to conciliate them. The Legislature was to meet on the 6th Jan. at San José, but an effort would probably be made to remove the seat of Government to San Francisco. The approach of the session was exciting considerable feeling, on account of the extreme uncertainty of the political complexion of the body, and of the result of the strife for the post of United States Senator, in place of Col. Fremont. No less than seven candidates were competing for this honour. It seems to be generally admitted that the colonel cannot be re-elected, the members of the mining districts being, almost to a man, opposed to him. The *Pacific News* of 1st January gives the official list of shipments of gold dust in 1850, ending 31st Dec. The aggregate amount is \$29,441,583, or nearly 6,000,000l. sterling: the largest amount was shipped in August, when the exports amounted to \$5,282,880. Besides this, it is estimated that \$12,000,000 have gone forward in private hands, and \$6,000,000 have been retained for circulation, making the total yield of the mines, for 1850, \$48,000,000, or between 9,000,000l. and 10,000,000l. sterling. The general news is of an exceedingly discouraging nature—indeed, a loan was deemed unavoidable, unless Congress afforded some relief. Sales of merchandise generally were scarcely to be effected at any prices.

LATEST CURRENT PRICES OF METALS.

LONDON, FEBRUARY 21, 1851.

| ENGLISH IRON. | | per ton. | FOREIGN IRON. | | per ton. |
|---|------|-----------|---|----|----------|
| Bar, bolt, & square, London. | 25 7 | 6-5 10 | Swedish | 15 | 10 0 |
| Nail rods | 6 | 6-8 5 | CCND | 17 | 0 0 |
| Hoops | 7 | 0-7 5 | PSI | — | — |
| Sheets (singles) | 12 | 6-7 17 6 | Gourlett | — | — |
| Bars, at Cardiff & Newport | 4 | 15-4 17 6 | Archangel | — | — |
| Refined metal, Wales | 3 | 5 0-3 15 | Swedish steel | 15 | 10 0 |
| Do. anthracite | 3 | 10 0 | Ditto faggot | 15 | 0 0 |
| Pigs in Wales | 3 | 0 0 | ENGLISH COPPER. | — | — |
| Do. do. forge | 2 | 5 0-2 10 | Sheets, sheathing, & bolts, p. lb. | 0 | 0 9½ |
| Do., No. 1, Clyde | 2 | 3-2 3 6 | Tough cake | 84 | 0 0 |
| Blewitt's Patent Refined Iron | 3 | 10 0 | Terms.—a, 6 months, or 2½ per cent. dis. | — | — |
| for bars, rails, &c., free on board at Newport | 3 | 10 0 | b, ditto; c, ditto; d, 6 months, or 3 per cent. dis. | — | — |
| Do., do., for tin-plates, boiler plates, &c., ditto | 4 | 10 0 | e, 6 months, or 2½ per cent. dis.; f, ditto; g, ditto; h, ditto; i, net cash; j, 6 months, or 3 p. ct. dis.; m, net cash; n, 3 months, or 1½ p. ct. dis.; o, ditto, 1½ dis. | — | — |
| Stirling's Patent in Glasgow | 2 | 10 0 | * Cold-blast, free on board in Wales. | — | — |
| Toughened Pigs in Wales | 3 | 10-3 15 | | | |
| Staffordshire bars, at the works | 5 | 7 6 | | | |
| Rails | 5 | 2 6 | | | |
| Chairs (Clyde) | 4 | 0 0 | | | |

WELSH BAR-IRON is in demand for shipment; but few parcels in second hands; the makers are very firm, being full of rail orders.

IN SCOTCH PIGS a better feeling exists, they may be quoted at 6d. per ton dearer than last week; the shipments during the month of January were 25,000 against 19,000 in 1850, being an excess of 10,000 tons; a good demand exists for foundry purposes. By the last accounts from New York, a large business had been done at from \$21½ to \$22 on the spot; 5000 tons had been sold to arrive.

STAFFORDSHIRE IRON is again much inquired for; the makers are full of orders, and quite indifferent about effecting sales.

SWEDISH IRON.—Some specifications are on the market suitable for India, which are held at 12l. per ton.

SWEDISH STEEL is inquired for at 15l., holders demanding 15l. 5s. to 15l. 10s.

COPPER.—A good home trade doing.

YELLOW METAL SHEATHING.—The low price of this article, as compared to copper, is attracting the attention of shipowners.

BRITISH TIN.—Common is difficult of sale at the advanced rates; refined is in great demand.

FOREIGN TIN is firmly held; holders are not disposed to give way in price; buyers at 87½, sellers at 87l. 10s.

SILVER.—Not any transactions have taken place.

LEAD is in great request.

TIN-PLATES sell readily. Best charcoal are very scarce, and in great request for Canada and the United States.

GLASGOW, FEB. 20.—Our pig-iron market has been very quiet this week, with scarcely any variation in prices. We quote 42s. 6d. and 43s. per ton for good brands, and 43s. 6d. and 44s. for Gartsherrie No. 1, net cash on immediate shipment, which is, if anything, in favour of buyers since our last.

NEW YORK, FEB. 5.—New copper sheathing is in steady demand at quotations; yellow metal has also been sold at former prices. In iron a better feeling was exhibited in the market for Scotch pig, and there have been sales of 350 tons, at \$21 50c., six months to arrive, closing at \$22 as the asking rate. English bars were quiet, but firm, at \$40, six months; a sale of 100 tons was reported at that rate. In lead, Galena was in limited supply, and the market rather firmer; holders were asking \$5 per 100 lbs., and seemed unwilling to realise at a lower price. Of foreign 100 tons were disposed of at about \$4 80c., cash.

SOUTH STAFFORDSHIRE COAL AND IRON TRADE.—We have no alteration in the coal trade worthy of notice; its buoyancy, as reported last week, still continues, and all parties engaged therein, from the masters to the working men, are well and profitably employed; and, on the whole, a better feeling exists between master and man than has been known for some time. Ironstone continues scarce, and the workmen have full employment in this article. We have been informed of sales for next quarter's delivery at an advanced price, but holders generally are not disposed to sell on speculation, but to take their share of the good or ill, as the case may be. The iron trade continues brisk, and prices are very firm. There is a great demand for export trade, and additional works have been put going by Messrs. Barrows and Hall, the British Iron Company, and others, in order to enable them, if possible, to get through the orders they have on hand, before a rise in price takes place. The increased demand, we notice, is not confined to the exportation, as the orders from chain and nail masters are unprecedentedly large, as well as from all hardware manufacturers throughout the district. On the whole, we consider this trade of the district in a more flourishing state than it has been known for a considerable time. The tin trade, as reported last week, continues brisk, and prices are expected to move upwards.—*Wolverhampton Herald, Feb. 19.*

New Patents.

SPECIFICATION ENROLLED DURING THE PAST WEEK.

A. HOLZ, of Greenwich, Kent, engineer: For improvements in steam-engines. These improvements consist mainly in forming the circumference of the piston curved or convex, so that it may have the capability of inclining from side to side in the cylinder, and thus constantly change the rubbing surface. Mr. Holz also proposes to cover in the space between the two cylinders, so as (whether the engine be condensing or high-pressure) always to keep the cylinders hot. The employment of this latter appendage is, however, optional, and it may be adapted to the cylinder of steam-engines with pistons of the ordinary construction. Claim.—The improvements in steam-engines described.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

E. Ulmer, of the firm of E. and W. Ulmer, of Fetter-lane, London, printing-press makers, for certain improvements in printing-presses.

C. W. Tupper, of Oxford-terrace, Middlesex, gentleman, and Alphonse Rene la Mere de Normandy, of Dalston, in the same county, gentleman, for improvements in the manufacture of iron coated with other metal, commonly called galvanised iron.

C. Cowper, of 20, Southampton-buildings, Chancery-lane, for improvements in moulds for electro-metallurgy.

G. A. Buchholz, of Norfolk-street, Strand, Middlesex, civil engineer, for improvements in motive-power and in propulsion.

D. F. Masirata, of Golden-square, Regent-street, Middlesex, gentleman, for a new mechanical system with compressed air adapted to obtain a new moving power.

T. D. Rotch, of Furnival's-inn, gentleman, for improvements in centrifugal apparatus for separating fluid from other matters.

W. Beadon, Jan., of Taunton, Somerset, gentleman, for improvements applicable to the roofing of houses, buildings, and other structures.

H. L. Pattinson, of Scots-house, Gateshead, manufacturing chemist, for improvements in the manufacture of Pattinson's oxalic acid of lead.

Henry Francois Marie de Pons, of 24, Boulevard Poissonniere, Paris, France, gentleman, for improvements in constructing roads and ways, and pavements of streets, and the ballast of railways.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

W. R. Hodges, Manchester, iron stretcher for a traveller's bag, or portmanteau.

E. Shingler, Birmingham, Wellington boot.

H. J. and D. Nicoll, Regent-street, back or waistband for trousers; also, coat.

J. Langford, Birmingham, handle for teapots and other vessels.

J. D. Canlicher, Anstruther Villa, St. John's-wood, cork jacket, or life-preserver.

Clayton, Shuttleworth, and Co., Stamp-End Works, Lincoln, portable steam-engine.

S. Messenger, Birmingham, burner for lamps. (splattered).

H. Bradford, and M. Frost, Primrose-hill, St. Brides, amphi-ton, or doubly-perfected.

W. A. Biddell, St. John's-square, alarm door and window wedge.

J. Hadley, Worcester, sole to cover tires of carriage wheels.

J. Welch and J. Marston, Chesham, the unique braces.

J. Morrison, Sheffield, tap for high-service pressure.

T. Evans and Co., Wood-street, Cheap-side, the Queen's parasol.

PROVISIONAL REGISTRATIONS.

S. Geary, Euston-street, Easton-square, variegated lamp.

T. and G. Barnes, New-court, Goswell-street, the unique braces.

B. Browne, Belvedere-road, Lambeth, shirt.

W. Leuchars, Piccadilly, double article lock.

C. H. Moysen, Bedford-street, Strand, new irrigator for making graduated and variable.

G. Gibbs, Bristol, nipple-cover or protector, and hammer for percussion fire-arms.

Thornton and Killick, Ludgate-hill, amphi-ton collar.

T. W. Tipler, Rugby, portable fire-escape.

D. S. Brown, Alexandrian Lodge, Old Kent-road, famigating cover for bushes.

A. Boucher and Co., South street, Finsbury, castor.

T. R. Brunell, Newman-street, Oxford-street, photographic apparatus.

W. M. Bywater, Piccadilly, water-meter.—*Mechanics Magazine.*

ACCIDENTS.

Carn Brea.—T. Webster, in reaching over a stall to get at a piece of timber, missed his footing and fell, head-foremost, a distance of 10 fms. into a ganniss, and was killed.

Distington.—Richard Taylor and Joseph Castley were killed whilst at work in Dyon Colliery, by a fall of roof.

West Bromwich.—Wm. Rogers was killed by a whinsey, at Moor Colliery; he had been at work in the pit all night, and, on coming up, he was seen loitering about the whinsey. Shortly afterwards he was found lying near it quite dead—it is supposed he had been knocked violently down by it.

—Daniel Shakespeare was killed by a fall of coal from the roof of the pit, whilst at work in Messrs. Chavasse and Wilcox's New Meeting Colliery.

—Edward Woodcock was killed by a fall of coal in a pit belonging to Messrs. Baginall's Crab Tree Colliery.

St. Helen's.—T. Hayes was killed by a fall of roof at the Union Colliery.

Dudley.—W. Kitson was seriously injured by the explosion of a quantity of powder at the pits of Messrs. Homfray and Brettell, Gorty Hill.

Bilston.—F. Seager and C. Kendrick were killed by a fall of coal, while cutting out one of the "pillars" in the hollows of a pit at Broad-water Field.

Current Prices of Stocks, Shares, & Metals.

| STOCK EXCHANGE, Saturday morning, Eleven o'clock. | |
|---|---|
| Bank Stock, 8 per Cent., 215½ | Excheq. Bills, Small, 1½d., 47s 50 pm. |
| 3 per Cent. Reduced Ann., 96½ | Brazilian, 5 per Cent., 92½ |
| Consols for Account, 96½ | Mexican 5 per Cent., ex Jan. Coup., 83 |
| New 3½ per Cent. Ann., 96½ | Portuguese, 4 per Cent., 83½ |
| Long Annuities, 7 11-16 | Russian, 4½ per Cent., 97½ |
| India Stock (£1000), 60 | Spanish, 5 per Cent., Acct., Feb. 28, 19½ |
| Ditto (under £1000), 61 | Belgian, 5 per Cent., 102 |
| Excheq. Bills, 500l., 1½d., 47s 50s pm. | Dutch, 2½ per Cent., 58½ |

MINES.—The downward tendency in prices of dividend mines, as noticed last week, can scarcely be said to continue, but the business transacted in them has been on a narrowed scale. Possibly, an apprehension that the Bank would still further raise the value of money by an increase in the rate of discount, may have contributed to this effect, although such a step, if contemplated, has been deferred. It may be remarked that dividend mine shares rule in value as high as 600l. each share, rendering the higher grades of shares the most susceptible of a fluctuation in price from monetary derangements. Regarding other mines, new, or more or less advanced, a very satisfactory business continues to be transacted, which will, doubtless, continue so long as the public discriminate for themselves, or avail of the means at hand for ascertaining the difference between a bona fide and a doubtful speculation.

In the Metal Market—there is a good business doing in Copper.—Lead is in demand.—Staffordshire Iron firm in price: the makers are full of orders.—The demand for Refined English Tin continues considerable. Contrary to expectation, no alteration has yet been made as regards the duty on Foreign Tin, and we quote the market quiet, but very firm; it is reported that the quantity coming forward in the next Dutch Company's sale will be considerably short of the amount estimated.

The ticketings for Foxdale lead ore (100 tons) ranged from 10l. 7s. 6d. by Locke, Blackett, and Co., to 12l. 1s. by J. Walker, Parker, and Co.

The ticketings for about 100 tons of Laxey (Isle of Man) lead ore, varied from 17l. 12s. 6d. by Locke, Blackett, and Co., to 19l. 2s. 6d. by both Mather and Co. and J. P. Eyton.

Wheal Trehan lead ores sold—55 tons, at 22l. 12s. 6d., and 40 tons at 4l. 15s. 6d. per ton.

West Basset first sampling is computed 46 tons of copper ore.

The Tywarthayle and Nancecuke sold 11 tons lead ore, at 17l. per ton. A parcel of silver-lead ore from Wheal Arthur, in Calstock, has been assayed, and found to produce 15 cwt. in 20, and 133 ozs. of silver to the ton of ore—value, 40l. 10s.

The biddings for 24 tons of Court Grange silver-lead ore varied from 15l. per ton, by Thomas Somers, to 17l. 12s. 6d., by both Locke, Blackett, and Co., and Sims, Williams, Nevill, and Co.

Daren Mine sold 10 tons of silver-lead ore at 15l. per ton, to Newton, Keates, and Co.

The 20 tons of Esgair Llee lead ore sold to Walker, Parker, and Co., have been delivered at Dee Bank, at 5s. per ton freight.

The Polberro tin sampling for last month will be about 24 tons. The levels in old Polberro, on the copper lodes, are rather poor at present.

Wheal Mary Emma sold 2 tons of black tin, at 52l. 5s. per ton.

Birch Tor sold 2 tons of black tin to Messrs. Enthoven, at 54l. per ton. At East Crowndale the bunch of tin discovered about a month since has extended itself to the 40 fm. level east, and the 50 fm. level towards this bunch of ore is looking well, and every foot driven improves in character and quality. A stone of tin of 60 per cent., weighing 49 lbs., has been sent from this mine to the Exhibition of Industry of all Nations.

A great improvement has taken place at North Wheal Robert.

At East Wheal Russell the engine has been put in operation, and works exceedingly well. The lode in the shaft looks very promising.

At Bedford United the lode in the 103 is still yielding 10 tons of ore per fm., and the lode in Arscott's winze is yielding 12 to 14 tons per fm.

The Wicklow Copper Mine has declared its half-yearly dividend, at the rate of 20 per cent. per annum.

At Wheal Reeth meeting, on Monday, the accounts showed—Mine cost for Oct., 807l. 5s. 2d.; Nov., 765l. 7s.; Dec., 700l. 12s. 6d.; doctor and club, 30l. 18s. 6d.; treasurer, 18l. 18s.; merchants' bills, 634l. 8s. 1d.; 2957l. 9s. 3s.—By tin sold (93 tons 13 cwt. 1 qrs. 26 lbs.), 4214l. 5s. 2d.—leaving profit, 1256l. 15s. 11d.; add balance last account, 585l. 7s. 5d.—1842l. 3s. 4d.—A dividend of 10l. per share (1200l.) was declared, and balance, 642l. 3s. 4d. carried to next account.

At Levant Mine meeting, on Tuesday, the accounts for Nov. and Dec. showed—By tin ore sold, 2542l. 1s. 9d.; copper ore ditto, 3166l. 17s. 2d.; tin leadings ditto, 119l. 2s. 10d.; carriage of ore and other receipts, 141l. 12s. 5d.—5969l. 14s. 2d.—Mine cost for Nov. and Dec., including coal and carriage, 3942l. 8s. 1d.; merchants' bills, 1129l. 17s. 2d.; leaving profit, 897l. 16s. 11d.—deduct dividend, 5l. per share (800l.), leaves balance in hand, 97l. 16s. 11d.; add balance in hand last account (less charged towards new machinery, 200l.), 615l. 4s. 4d.; leaves balance now in hand, 713l. 1s. 3d.

At the Providence Mines meeting, on Thursday, the accounts showed—Balance to end Oct., 53l.; copper ore, 31l. 13s. 4d.; tin ore, 2540l. 12s. 3d.; sundries, 8l. 11s. 9d.—2633l. 17s. 4d.—Mine cost for Nov., Dec., and Jan., 1476l. 0s. 4d.; carriage, 51l. 9s. 10d.; materials, 520l. 2s. 3d.; lord's dues, 116l. 1s. 8d.—leaving balance in favour of mine, 470l. 3s. 3d. A dividend of 15s. per share (420l.), was declared, and balance carried to next account.

At East Pool Mine meeting, on Tuesday, the accounts for Nov. and Dec. showed—To labour cost for Dec. and Jan., 969l. 19s. 5d.; merchants' bills, 391l. 13s. 3d.—1361l. 12s. 8d.—By copper ore sold, 5th December, 1026l. 9s. 6d.; tin, ditto, 198l. 9s. 6d.; received for water charge, 120l.; showing loss of 16l. 13s. 8d.; to which add, book in debt last account, 815l. 0s. 7d. (less, received of P. V. Robinson, 9s. 7d. in 1700l. 5s. 7d., debt, 567l. 18s. 8d.); leaving mine now in debt, 263l. 15s. 7d. The mine was reported to be looking well, particularly on a south lode—450 tons of ore promised for next sale, and they are monthly discovering a greater quantity of ore than they are taking away.

At Cook's Kitchen meeting, on Wednesday, the accounts showed—Ores sold in Jan. and Feb., 1858l. 10s. 7d.; call and debts, 3692l. 5s. 7d.; sundries, 1l. 14s. 11d.—5552l. 11s. 1d.—Balance from the last account, 3655l. 13s. 6d.; costs and merchants' bills for Nov. and Dec., 1756l. 1s. 2d.; leaving balance in favour of adventurers, 130l. 16s. 5d.—The accounts also showed the assets of the mine to be 4258l. 4s. 5d., and the liabilities to merchants and for dues, 4127l. 8s.

At Fowey Consols meeting the accounts for September, October, Nov., and December, showed—Balance from last account, 7398l. 14s. 7d.; ores, &c., sold, 12,486l. 14s. 8d.; sundries, 79l. 18s. 6d.—19,965l. 7s. 9d.—To costs and merchants' bills, 12,524l. 13s. 10d.—leaving balance in favour of adventurers, 7440l. 13s. 11d.

At the two-monthly meeting of the Stray Park, Camborne Vean, and Wheal Francis Mines, on Friday, the accounts showed—By sale of copper ores, 1088l. 6s. 11d.; black tin, 39l. 7s. 3d.; balance in hand last account, 613l. 11s. 7d.—1741l. 5s. 9d.—Tutwork cost for Nov. and Dec., 826l. 5s. 5d.; merchants' bills, 244l. 6s. 8d.; tribute pay, subside, and lord's dues, 419l. 10s.; loss in Wheal Francis during Nov. and Dec., 88l. 10s. 3d.—leaving balance in favour of adventurers, 162l. 13s. 5d. The average gettings of miners in November and December months had been—tutworkmen, 2l. 7s. 6d., and tributaries, 2l. 2s. 4d. per month. The reports of the agents and Mr. Vawdrey, the purser and manager, are inserted entire in another column, both of which should be attentively perused by all parties interested in the well-doing of these mines.

At Condurrow Mine meeting, on Monday, the accounts showed—By sale of copper ore, two months, 1235l. 14s. 11d.; tin, ditto, 1147l. 2s. 3d.—2382l. 17s. 2d.—To costs and merchants' bills, 1828l. 13s.; lord's dues, 119l. 2s. 10d.; showing profit, 435l. 1s. 4d.—Book in debt last account, 706l. 8s. 1d.; leaves mine now in debt, 271l. 6s. 9d.

At Great Sheba Consols two-monthly meeting, at Exeter, on the 14th inst., the accounts showed—Balance of former account, 250l. 6s. 4d.; cash received, 794l.—1034l. 6s. 4d.—Mine cost for October, 298l. 7s. 1d.; Nov., 294l. 8s. 3d.; Dec., 317l. 6s. 3d.; leaving balance in hand, 124l. 4s. 9d. A call of 1l. per share was made; the lessee was paid a further instalment of 100l.; and the following shareholders re-elected as the committee for the next two months—Messrs. H. Hooper, J. Daw, E. Woolmer, W. Pearce, J. S. Higgs, W. L. Jones, W. W. Whitcomb, R. Serjeant, and H. Rattenbury. [Capt. Spargo's report is inserted among our Mining Correspondence.]

At Wheal Mary meeting, at Redruth, on Tuesday, the accounts showed Balance last account, 441l. 1s.; mine cost for Nov., 379l. 8s. 6d.; ditto Dec., 416l. 10s. 5d.; merchants' bills, 406l. 1s. 1d.—1643l. 1s.—By ores

sold (less dues) 745l. 1s. 2d.; call of 15s. per share, 742l. 10s.; leaving balance due to pursers, 155l. 9s. 10d. The accounts were passed, a call of 10s. per share made, and it was resolved that the sump-shaft be sunk to the 110 fm. level with all possible dispatch. [The report is inserted among our Mining Correspondence.]

At the Wheal Mary meeting, on Thursday, the resolutions of the former meeting were agreed to, a statement was shown that the old shares had nearly all been exchanged for the new stock, and a resolution was passed that a meeting should be called on the 27th inst., for the purpose of making a call, and the further dispatch of business.

At the Millpool meeting, on Tuesday, the accounts for Oct., Nov., and Dec., were passed, showing—Balance from last account, 263l. 8s. 11d.; tutwork cost for Oct., 156l. 11s. 1d.; Nov., 110l. 5s. 7d.; Dec., 124l. 8s. 4d.; merchants' bills, 247l. 11s. 2d.; Messrs. Harvey for engine, as per contract, 616l.—1518l. 5s. 1d.—By call of 10s. per share, 512l.; tin sold, 26l. 2s.; arrears on deposit, 5l.—leaving balance against the adventurers of 975l. 3s. 1d.—A call of 20s. per share was made to meet the above, and for prosecuting the mine.—Capt. M. Reed, of Wheal Lewis, was appointed to inspect the mine for the adventurers, whose report we shall give in our next week's Journal.

At the Exmoor Eliza meeting, at Tavistock, on Tuesday, the accounts, which showed balance against adventurers 242l. 13s. 9d., without a single arrear of call, having been audited and passed, a call of 7s. 6d. per share was made, to pay off liabilities, and for the next two months' cost. The total disbursements from the commencement had been 3610l. 10s.

At Caradon Vale meeting, at Exeter on Friday, the accounts showed—Balance last account, 52l. 15s. 1d.; mine cost for Nov., 155l. 5s. 4d.; for December, 166l. 10s. 9d.; a further instalment to lessees, 165l.; postages, bankers' commission, &c., 4l. 11s.—544l. 2s. 2d.—Cash received, 391l. 10s.; leaving balance due to treasurers, 152l. 12s. 2d. The accounts were passed, and a call of 5s. per share made. The committee of management were re-elected for the ensuing two months. [The reports of Capts. Spargo and Seymour are inserted among our Mining Correspondence.]

At a meeting of the finance committee of Lamheroe Wheal Maria, on Thursday, Capt. Opie was appointed agent of the mine, at the same salary as the late Capt. Tabb. It was resolved that machinery for stamping and dressing the tin ores now at surface, and raising from the 50 and 60 fm. levels engine-shaft, should be erected by contract without delay. The new discovery of a branch of pure tin, 4 to 5 in. wide, on the champagne lode at surface, was reported by the superintendent to be worth 50l. per fathom.

At the adjourned meeting of the United Mines, held at Tavistock, it was stated that every share was taken up. The works were progressing in a most satisfactory manner; the shaft was secured to the 40 fm. level, and the machinery in perfect repair. Accounts were shown that, from Wheal Anderson, now part of the United Mines, during the last three years, 169 tons 16 cwt. 2 qrs. 16 lbs. of tin had been raised, which had realised 6642l. 10s. 3d. A committee was appointed; Capt. Harper nominated agent; Mr. Square, pursuer; and Mr. Matthew Loam, engineer. It was finally resolved that the mine should be inspected by Capts. Samuel Secombe, Robert Danstan, Richard Williams, James Carpenter, and J. Lean, who should report thereon, and lay down a plan for future working.

At the Old Brimpts meeting, held at Tones, the captain reported that the stamps were in full operation. There was upwards of 500l. worth of tin at surface; and, from the superior quality of the lodes, both in the eastern and western sett, a great quantity of tin would be raised, so that the company could look forward to receiving dividends. According to an assay, made at Ashburton, the ore was reported to be of 72½ per cent., and its value 60l. per ton. The shareholders expressed themselves satisfied with the vigilance and economy displayed by the management, who had, in addition to clearing up the ancient workings, and driving two new adits, raised 500l. worth of tin, and brought the mine in course of working by the trivial expenditure of 600l. The ground around the lodes is soft and congenial for tin, which has been found in large quantities, and with very little expense.

A special meeting of Peter Tavy and Mary Tavy Consols was held on Tuesday, to confirm an amendment in one of their bye-laws, which will give the committee further power, to carry on the workings of the sett with greater spirit, also preventing the adventurers from attending useless meetings;—this arrangement, it appears, has met with the general approval of those interested in the adventure. The chairman read the captain's report and several letters, and pointed out the advantages expected to be derived from an addition that has lately accrued to the sett, and a reduction of dues. Costeering will take place in Coles' land as soon as the weather will admit, to sink a new shaft a short distance from the present workings of the Great Wheal Friendship, and it is expected the lode will be cut near the surface. The chairman and committee were complimented upon the energetic and economical management pursued in carrying out the workings.

The Imperial Brazilian produce returns from the 2d to 22d December show—from Gongo 9 lbs. 10 ozs. 12 dwts., and from Bananal 6 lbs. 5 ozs. 17 dwts.—= 16 lbs. 4 ozs. 9 dwts.

The National Brazilian workings are proceeding in a satisfactory manner, and the lode is looking favourable. They have 240 tons of stone in store, waiting for the completion of the stamps' heads. Cuiaba produce, from Nov. 27 to Dec. 6 was 3 mks. 1 oz. 4 oits. 34 grs.

The Linares agent reports the improvement of the lode in Wilson's shaft, and the 55 fathom level driving west from San Anton winze, as still continuing. The lode in the 45 fm. level, driving east of Shaw's shaft, is assuming a more regular character, and great expectations are entertained from a further prosecution of the 31 fm. level: the men are now stoping on tribute at 2½ reals per arroba. The other workings continue without material alteration, but the weekly produce is increasing. The ore in stock at Linares on the 8th Feb. was 295 tons; at Baylen, 6½; at Seville, 178½; at Malaga, 59; on board ship, 43½=582½ tons; besides which 21½ tons had been sent for shipment.

Advices have been received from the St. John Del Rey Mining Association. The produce for Nov. was 21382 lbs. troy. The supply of stone continued very abundant, and there was ample employment for the people engaged on the workings. The profit for October was 2681l. 13s. 10d.; there had been expended for the railroad, spalling floor, aqueduct, &c., about 2700 rs.; iron pipes, 2000 rs.; tiles, 400 rs.; cog-wheel, 1513 rs. The mine would be shortly in good working order.

The Real del Monte Company's affairs are, we understand, nearly brought to a close—a second division of assets amongst the debenture-holders, of 1l. per red debenture, and 2l. upon the outstanding 50l. loan of 1827, being now declared. There will, probably, be a final dividend of a few shillings more on each debenture.

The produce of the Kongsberg Silver Mines, in Norway, for the month of December, was 2707 marks 2½ ozs. fine silver; in December, 1849, it was 1627 marks 3½ oz. The entire production for the year, ending 31st of December, 1850, amounted to 17,476 marks 2 oz. fine silver; in 1849, it was 17,861 mks. 1 oz.—showing a deficit on the year 1850, of 384 mks. 7 ozs. There are, however, larger quantities of reserves, and several important discoveries have been made during the past year.

HULL, THURSDAY.—Messrs. T. W. Flint and Co. state, that the transactions in mining shares during the week have been unimportant in amount: prices have undergone no material variation. Tramways are worth 20½ and 21½; Wellington, 15½; St. Anby and Grylls, 5½; Gustavus, 5½; West Tolgus, 5½; Trefusis, 17; Alfred Consols, 15½, 16.—The market for railway shares is good, and has an improving tendency.

MALLEABLE BRASS.—Ordinary brass, consisting of 27-4 to 31-8 parts of zinc and 71-9 to 65-8 parts of copper, is brittle while hot, and is thus only fit for casting. An alloy, however, can be formed, malleable like iron; 33 parts copper, and 25 zinc, fused together, will lose three parts, and the remainder will be a composition of 60 parts copper, and 40 zinc, and, by properly fusing 60 parts copper and 40 zinc, so that no zinc escapes in the amalgamation, a metal is obtained of a specific gravity 8-44 harder than copper, tough, close-grained, and perfectly malleable.

PRICE OF MATERIALS,

As charged at the Stray Park Mines, in the following months—

| Description. | November. | December. |
|-------------------------------|-------------------|-----------|
| Coal, carriage included | per ton 14s 0d | 14s 0d |
| Timber, oak | per foot 0 10 | 0 10 |
| Iron, common | per cwt. 5 6 | 5 6 |
| Rope | 34 0 | — |
| Tallow | — | 40 0 |
| Lead, white | 24 6 | — |
| Rail, 8-inch patent | 16 0 | — |
| Candles, best | per doz. 4 6 | 4 6 |
| Powder | per 100 lbs. 36 0 | 36 0 |
| Cans | per doz. 4 0 | 4 0 |
| Safety fuse | per coil 0 3 | 0 3 |

CORNISH STEAM-ENGINES.

The number of pumping-engines reported for the month of Jan. is 26—the quantity of coals consumed being 2854 tons, lifting, in the aggregate, 26,000,000 tons of water 10 fathoms high—the average duty of the whole is, therefore, 31,000,000 lbs. lifted 1 foot high by the consumption of a bushel of coal.—The following have exceeded the average—

| Mines. | Engines. | Length of stroke in ft. | Load in pounds. | Load per sq. inch on piston. | Strokes per min. | Consumption of coal by consump. in bus. of 1 bush. coal of coal. | Millions lifted 1 foot by consump. in bus. of 1 bush. coal of coal. | Lifted 1 foot by 1c. |
|---------------|-------------------|-------------------------|-----------------|------------------------------|------------------|--|---|----------------------|
| Great Work.. | Leed's 60-in. .. | 9-0 | 55,343 | 15-2 | 7-5 | 2448 | 6-6 | 72 |
| East W. Croft | Trevenson's 80 | 10-33 | 82,333 | 12-2 | 6-5 | 3948 | 5-6 | 65 |
| Carb Brea... | Sims's 50 & 90 | 9-0 | 51,125 | 20-2 | 8-8 | 1764 | 3-6 | 68 |
| Poldice... | Sims's 85-inch | 10-33 | 78,207 | 9-6 | 8-9 | 4352 | 3-6 | 79 |
| S. W. Frances | 75-inch | 11-0 | 58,192 | 10-7 | 5-4 | 2424 | 5-7 | 68 |
| United Mines | Taylor's 85-in. | 11-0 | 98,356 | 15-8 | 6-5 | 5169 | 6-0 | 72 |
| Ditto | Cardozo's 90-in. | 9-0 | 100,682 | 13-8 | 7-1 | 4966 | 5-6 | 77 |
| Ditto | Eldon's 30-inch | 9-0 | 13,631 | 16-0 | 8-0 | 629 | 6-3 | 76 |
| Ditto | Loam's 85-inch | 10-0 | 87,947 | 11-6 | 8-1 | 4738 | 5-5 | 66 |
| Ditto | Hocking's 85-in. | 10-0 | 97,817 | 14-4 | 7-3 | 5226 | 5-6 | 67 |
| Tywarthayle. | Gardiner's 80-in. | 10-0 | 77,621 | 12-3 | 7-9 | 4350 | 5-4 | 65 |
| East Wh. Rose | Michell's 85-in. | 10-0 | 81,173 | 12-8 | 3-6 | 2298 | 5-9 | 71 |

SILVER-LEAD ORE.

BIDDINGS FOR 24 TONS OF SILVER-LEAD ORE FROM COURT GRANGE MINES.

Sold at Aberystwith, on the 18th of February.

| Bidders. | Amounts Bid. |
|-----------------------------------|------------------|
| Locke, Blackett, and Co. } | purchasers |
| Sims, Williams, Nevill, and Co. } | £17 12 6 |
| Mather and Co. | 17 3 0 |
| Newton, Keates, & Co. | 17 2 6 |
| Pontifex and Wood | 15 10 0 |
| Thomas Somers | 15 0 0 |
| Tamar Smelting Company | 17 3 6 |
| Walker, Parker, and Co. | 16 16 0 |

| Mine. | Tons. | Price. | Purchasers. |
|-------------|-------|---------|-----------------------|
| Daren | 10 | £15 0 0 | Newton, Keates, & Co. |

Sold at Liskeard, on the 17th February.

| Mines. | Tons. | Price per Ton. | Purchasers. |
|--------------------|-------|----------------|-----------------------|
| Wheal Trehan | 55 | £22 12 6 | Tamar Smelting Co. |
| ditto | 40 | 4 15 6 | Newton, Keates, & Co. |

Sold at Aberystwith, on the 17th February.

| Goginan | 47½ | £16 7 0 | Walker, Parker, & Co. |
|------------------|-----|---------|-----------------------|
| ditto | 12½ | 16 7 0 | Newton, Keates, & Co. |
| Frongoch | 80 | 11 14 0 | ditto |
| Cwmystwith | 60 | 11 11 6 | Walker, Parker, & Co. |

Ticketings at the King's Head Hotel, Holywell, on the 20th February.

| | | | |
|---------------------|----|---------|-----------------------|
| Pant-y-mwyn | 35 | £11 1 6 | J. P. Eyton. |
| Pen-y-henblas | 54 | 11 13 0 | Walker, Parker, & Co. |
| Westminster | 50 | 11 11 0 | ditto |
| ditto | 50 | 11 11 0 | ditto |
| Jamies | 40 | 10 12 6 | Newton, Keates, & Co. |
| Belgraves | 10 | 11 3 0 | J. P. Eyton. |
| Maccys | 90 | 11 10 0 | Newton, Keates, & Co. |
| Milvir | 12 | 11 11 6 | Walker, Parker, & Co. |
| Halkin Hall | 10 | 11 17 0 | ditto |
| Bwlch Gwyn | 40 | 11 10 6 | ditto |

LEAD ORES.

TICKETINGS FOR ABOUT 100 TONS FOXDALE LEAD ORE.

Douglas, Isle of Man, February 15.

| Bidders. | Price per Ton. |
|---|----------------|
| Walker, Parker, and Co.—Dee Bank (purchasers) | £12 1 0 |
| Mather and Co.—Bagillt | 11 11 0 |
| Newton, Keates, and Co.—Bagillt | 11 17 6 |
| Sims, Williams, Nevill, and Co.—Llanelli | 11 14 6 |
| Thomas Somers—Bristol | 11 3 6 |
| Tamar Smelting Company—Beeralston | 11 0 0 |
| Pontifex and Wood—London | 11 15 6 |
| Locke, Blackett, and Co.—Newcastle | 10 7 6 |

TICKETINGS FOR ABOUT 100 TONS LAXEY LEAD ORE.

Douglas, Isle of Man, 19th February.

| Bidders. | Price per Ton. |
|--|------------------|
| John P. Eyton—Llanerchymor } | purchasers |
| Mather and Co.—Bagillt | £19 2 6 |
| Walker, Parker, and Co.—Dee Bank | 19 0 0 |
| Newton, Keates, and Co.—Bagillt | 18 10 0 |
| Sims, Williams, Nevill, and Co.—Llanelli | 18 2 6 |
| Thomas Somers—Bristol | 18 0 0 |
| Tamar Smelting Company—Beeralston | 18 13 0 |
| Pontifex and Wood—London | 18 9 0 |
| Locke, Blackett, and Co.—Newcastle | 17 12 6 |

BLACK TIN

| Mines. | Tons. | Price per Ton. | Purchasers. |
|-----------------------|-------|----------------|--------------------|
| Wheal Mary Emma | 2 | £52 5 0 | Union Smelting Co. |

NOTICES TO CORRESPONDENTS.

In a few weeks we shall publish the commencement of a SERIES of PAPERS, to be continued weekly, detailing

The History of Mining,**ITS RISE AND PROGRESS:**

together with NOTICES of the EARLY METHODS of WORKING; ANCIENT and MODERN INVENTIONS, with their subsequent IMPROVEMENTS; comprising also A SKETCH of METALLURGICAL OPERATIONS, from the EARLIEST PERIOD to the PRESENT TIME.

The Great Exhibition.

In the "MINING JOURNAL" will also be given a detailed description, with all necessary illustrations, of every object connected with MINING and ENGINEERING, which may be produced at the forthcoming Great Exhibition.

The Compendium of British Mining,

BY J. Y. WATSON, ESQ., F.G.S.

We have the pleasure to announce, that Mr. WATSON has consented to revise and correct, to the present time, his interesting EPILOGUE OF BRITISH MINES, for re-publication in the "Compendium of British Mining," it will be remembered, the actual position of the "Compendium of British Mining" is the seventh portion of which appears in this day's Journal. In the different mines is accurately described, both as to capital and working.

At the end of each year, a copious Index is published, which renders the volume an interesting and valuable record.

"A." (Hammersmith) is quite in error—indeed, does us great injustice—in supposing that we are interested in depreciating the property referred to, because we inserted a lower quotation than he believes the position of the mine to warrant. The price was furnished us by a broker, and upon whose authority we published it. We never, in any case, interfere in the sale or purchase of shares.

GEMS AND PRECIOUS STONES.—We have a detailed report of an interesting lecture, delivered by Prof. Tennant, at King's College, in type, and which shall appear in next week's Journal.

"Amateur" (St. Ives).—A very simple machine for grinding and polishing specula of small size, has been contrived by the Rev. Mr. Hodgson, B.A., of Brathay, who has followed the general principles introduced by Lord Rosse, but has arranged the machine on the foundation of an ordinary turning lathe, driven by a foot-wheel, which, with the common overhead motion, and a part of the horizontal grinding machine, forms the principal portion of his polishing machine for specula. This contrivance, therefore, possesses the recommendation of being composed, in great measure, of the ordinary apparatus possessed by most amateurs, and may be readily fitted up for an occasional purpose, in those cases which would be scarcely considered of sufficient importance to call for the construction of the more elaborate machines of Lord Rosse or Mr. Lussell.

"W. M." (Holywell).—We shall be glad to receive the promised information.

Mr. Evan Hopkins is now inspecting mines at Redruth and Camborne, and, we believe, will be some time absent from London—letters, however, addressed to his office, will reach him.

"A. B." (Cornwall) is desirous of being informed of the best course to adopt, to ascertain what allowance is generally made to freeholders, according to the value per acre, for land taken by railways—and for the convenience of the land. Mr. R. Thomas, of Falmouth, or any local engineer or land surveyor, would at once render the information.

"An Enquirer" (Broad-street).—Prof. Level, in a late Number of the *Annales de Chemie*, gives the following analyses of several species of gold:—Sargol, in grains, gold 34.30, silver 15.30, copper 0.20; in large scales, gold 86.50, silver 11.30, copper 0.20. North American grains, gold 91.00, silver 8.70, copper 0.30. California, gold 92.70, silver 6.90, copper 0.40.

"S. H. T." (Redruth).—The crude idea of the electric telegraph has long been entertained; Schweitzer, a German, who published a work on electricity, in 1636, thus quotes from another author:—

"How Two Persons might Communicate with each other at a Distance by Means of a Magnetic Needle.—If Claudius were at Paris and Johannes at Rome, and one wished to carry some information to the other, each must be provided with a magnetic needle, so strongly biased with the magnet, that it may be able to move the other from Rome to Paris. Now, suppose that Johannes and Claudius have each a compass divided into an alphabet according to the numbers of the letters, and always communicated with each other at six o'clock in the evening, then (after the needle had turned three and-a-half times from the sign which Claudius had given to Johannes), if Claudius wished to say to Johannes 'come to me,' he might make his needle stand still, or move, till it came to C, then to O, then to M, and so forth. If now the needle of Johannes' compass moved at the same time to the same letters, he could easily write down the words of Claudius, and understand his meaning. This is a pretty invention; but I do not believe that such a magnet could be found in the world."

The wish of "A Subscriber" (Liverpool) shall be attended to.

CANNEL COAL FOR GAS.—Sir: In your Journal for Dec. 7 a new kind of Cannel coal for gas, found west of Edinburgh, is alluded to as having been analysed by Dr. Fyfe, of Aberdeen. It would be conferring a great benefit on many of your readers, if the learned doctor would oblige us with some further information on the subject.—Y. Z.: *Worked field, Feb. 17.*

NORTH WHEAL ROBERT.—Sir: In last week's Journal reference is made to this mine, whose prospects are said to be improved by its proximity to the west of East Wheal George. Now, Sir, the fact is that Wheal Robert is in Whitechurch parish, and East Wheal George in Walkhampton, consequently the parish of Salford Spiney stands between the two. Not only so, however, but the line of East Wheal George lode is a long way to the north of Wheal Robert sett.—OBSERVER: *Walkhampton, Feb. 18.*

"A Party Interested."—We will endeavour to obtain some particulars for an early Journal.

LOCOMOTIVE POWER IN MINES.—Sir: I shall be glad if any of your correspondents can inform me if they are aware of any mine where locomotive power is used—and, if so, whether the smoke is found to be objectionable?—CIVIL ENGINEER: *Cardiff, Feb. 18.*

WHEAL TOM.—We are informed that the report from this mine has unfortunately arrived too late for this week; but that for our next Journal a full and satisfactory report on the adventure will be furnished.

OAK FARM FIRE-CLAY WORKS.—In last week's Journal these works were represented as being the property of Messrs. Chance, the great glass manufacturers; we are requested to state that Sir S. R. Glynne is the sole proprietor, and Messrs. Chance are the occupiers only.

"J. H." (Derby).—The method of obtaining coke from small coal was fully explained by Mr. David Mushet in the Journal of Nov. 9, 1850, and also in a notice of Mr. Budd's patent, last week.

Miner (Camborne).—The National School of Mines in Paris is governed by two directors: there are 13 professors, who give lectures in mineralogy, geology, mining, metallurgy, paleontology, railroads and their construction, the economy and legislation of mines, elementary construction of buildings, analytical mechanics and elementary physics, geometry, &c. Among the professors are M. M. Elie de Beaumont, Ebelmen, Callen, Berthier, &c. Another school is established at St. Etienne; here there are professors of mineralogy, geology, machinery, geometry, mining, and arithmetic. An inferior establishment for workmen has some time been established at Alais, in the department du Gard.

"A Lapidary" (Bond-street).—The Nassuck diamond weighs 893 carats; it was captured by the Marquis of Hastings in India, and sold to Emanuel Brothers for 7200*l.*; it was purchased by the Marquis of Westminster. The brilliant earrings of the nabob of Arcot, formerly belonging to Queen Charlotte, were purchased by the same nobleman for 11,000*l.*; their weight is 2334 grains. The crown of St. Stephen, so mysteriously lost in the late Hungarian revolution, weighed 9 marks, 6 ounces, and contained 53 sapphires, 80 rubies, 1 emerald, and 338 pearls; the pearl of the Black Prince, at present among the crown jewels of England, is more valuable on account of its antiquity and historical recollections than its intrinsic worth.—Much interesting information on this subject is given in a work by Dr. Murray.

"E. J. E." (Cornhill).—The company of Sol Singular was established in the year 1846; its concessions are near the village of Bodera, not far from Huelandacina, and the sierra of Guadaluajara.

"An Extensive Holder" (Birmingham) will see, by a notification in last week's Journal from Mr. D. Hoffman, the representative of Col. Frémont in this country, that he denies the possession of any title to work the colonel's lands in California by the Anglo-Californian Gold Mining Company. Application should at once be made to the parties from whom the shares were purchased, and an explanation demanded.

"An Inventor" (Leeds).—A detailed description of Mr. Samuel's several inventions, for improvements in the construction of railways and steam-engines, appeared in the *Mining Journal* of the 28th December last.

"J. H." (Gray's Inn).—The emery of Kulah contains—Water, 1.90; alumina, 63.50; oxidized iron, 33.25; lime, 0.92; silica, 1.60; its specific gravity is 4.28. That of Samos—Water, 2.10; alumina, 70.10; oxidized iron, 22.21; lime, 0.62; silica, 4.00; specific gravity, 3.98. Nicoria—Water, 2.53; alumina, 71.06; oxidized iron, 20.32; lime, 1.40; silica, 4.12; specific gravity, 3.75. Gummuch—Water, 3.11; alumina, 77.82; oxidized iron, 8.62; lime, 1.90; silica, 8.13; specific gravity, 3.82. Naxos—Water, 4.72; alumina, 68.93; oxidized iron, 24.10; lime, 0.86; silica, 3.10; specific gravity, 3.75. Naxos was formerly supposed to be the only locality; but it has lately been discovered in several places in Asia Minor. The corundum is of the same species; but contains, amongst its varieties, the precious stones—the sapphire and the ruby. The sapphire of India has the specific gravity of 4.06, and is composed of alumina, 97.51, protoxide of iron, 1.89, which gives the colouring matter, silica, 0.50. The ruby of India specific gravity is 4.08; alumina, 97.32, protoxide of iron, 1.09, silica, 1.21. It must be observed that in these gems neither water or lime enter in their composition. The hardness of the sapphire is 100; the ruby, 90. The corundum of Asia Minor—Hardness, 112; silica, 2.05, with traces of manganese. The corundum of Nicoria—Hardness, 65.00; specific gravity, 3.99; water, 0.68; alumina, 87.52; protoxide of iron, 7.50; lime, 0.82; silica, 2.01. The corundum of India—Hardness, 58.00; specific gravity, 3.89; water, 2.86; alumina, 93.12; protoxide of iron, 0.91; lime, 1.02; silica, 0.96. Within the last year, emeralite has been discovered in several localities in Pennsylvania and North Carolina.

"A Shareholder."—We are informed that the new parties have possession of the works and property belonging to the Astorian Company, and are exerting themselves in getting them in order; indeed, the directors are quite satisfied with the favourable position which late despatches state their affairs to be in.

G. F. Barnes (King-street).—A new electrical machine has been invented, in which gutta percha, owing to its highly electrical properties, affords the means of producing in a very simple manner an amount of electricity as great as that of the common electrical machine. The machine, as improved, consists of a wooden frame, some 18 in. high, which carries two rollers of equal diameter, to the axis of one of which a handle is attached, by which it can be rotated. Around the rollers, and fitting them tightly, is passed a band of gutta percha, about 4 inches in width, the rubbers are four brushes of bristles, and are placed outside the band, and opposite the axis of each roller. A double conductor, connected by a brass rod passing over the top of the machine, is applied, similar in form to the conductor of a plate-glass machine. When the handle of the machine is turned, causing the gutta percha band to move at a moderate rate, an abundant supply of electricity is excited. The electricity given off appears to be of higher intensity, and under favourable states of the weather nearly as much in quantity as that of an ordinary plate-glass machine.

"N. R." (Bath).—We never interfere in the sale or purchase of shares: apply to a broker, who will also recommend a party to inspect and report on the adventure.

"W. O." (Chatham).—We quite agree with our correspondent as to the importance of Mr. Mitchell's series of papers on the Metallurgical Treatment of Ores; but their publication has, from several causes, been latterly unavoidably suspended: they shall, however, be resumed—perhaps in next week's Journal.

"Argus."—Newfoundland abounds with mineral of all sorts, particularly around Conception Bay. At the head of Chapel Cove there is a coal mine, and an iron mine on the northern side of the Belle Isle, and another at Harbour Grace, and a copper mine near St. John's, which has actually been worked by Cornish miners taken out for the purpose. There is also a quantity of the mineral called marcasite, copperas stone, and horse gold found about Catalina Harbour. Coal has been found on the banks of the Humber, and there are excellent gypsum quarries near Cape Ray.

THE WORLD'S WONDER.—"S." (Sedgefield, Durham) thus addresses the men of England:—"Fellow-countrymen! The London Exhibition, now generally known as the 'Hyde-park Babel,' is viewed by thinking men as being a Papistical invention, having for its object the enslavement of England; and daily occurrences seem to confirm the opinion. The Austrians, it is said, have got possession of the free city of Hamburg, so that they can stop the transit of mails, and send troops across to our shores, at the same time that 3,000,000 of foreigners are expected to arrive in London. We may, perhaps, before long, have to encounter a foreign foe at our own homes. Men of England, what think ye of the signs of the times?"

"G. D." (Liverpool).—Write to Mr. Jacob Brett, Hanover-square, London, who is the projector of the Submarine Telegraph Company, between England, France, and Ireland.

"An Adventurer" (Minorities) had better first formally apply to the committee for the particulars he requires, and then, if requisite, consult a solicitor. Had an established broker been consulted previously to purchasing the shares, "An Adventurer" would have escaped his present dilemma.

Mr. Lake's series of papers on the History and Manufacture of Gunpowder were commenced in the Journal of the 6th April last, and continued at intervals, until completed.

"W. C. G." (Austinfriars).—The railroad from Madrid to Aranjuez, in addition to the termini, has five stations, Gatafe, Pinto, Valdemoro, Cuernavaca, and Villa Verde. The railroad is nine leagues in length, 6666 yards, of 36 inches to the league; the passenger traffic is divided into four classes—the payment for the first class is 20 reals; 2d, 14 reals; 3d, 8 reals; 4th, 4 reals. As 20 reals are equal to a dollar (about 4s. 3d. sterling), it will be seen that the lower classes are carried a distance of over 27 miles for the low charge of 11*d.* The Queen of Spain gave the necessary ground on the Royal property for the construction of the line; the other land purchased cost 2,532,594 reals, equal to about 25,344*l.* About 7000 labourers were employed on the road; 92,279 feet are in a direct line, 82,185 feet on a curve, and 11,229 feet are level—the gradients are but slight. The iron was furnished by the houses of Messrs. Fox, Henderson, and Co., Stoddart and Co., Walter Williams and Co., Adams and Co., and the North Iron Company. Some of the locomotives have been purchased in Belgium. There are for the service of the line eight locomotives; 14 carriages of the first class, 16 of the second class, the same number of the third, and four of the fourth class; three arbores of luggage are allowed to be carried by each passenger, two reals per arbor is charged for luggage in excess. The average time for performing the journey is 1 hour and 40 minutes.

"B. F." (Leominster).—The velocity of the electric fluid on the wires of the electric telegraph, according to Prof. Loomis's recent observations, appears to be 19,000 miles in one second. This velocity may not be uniform, and is less than that given by Wheatstone. The difference in the condition of the wire, and in its magnitude, as well as the tension of the electricity, as suggested by Prof. Loomis, may influence the velocity of the fluid.

IMPORTANT TO MINE ADVENTURERS.—Being in possession of much information, on which the strictest reliance can be placed, having reference to mining projects put before the public, as well as the system observed in the management of many of those in course of working under the control of committees, we purpose next week commencing a series of papers, in which the most judicious system of office and mine management will be pointed out, in which, while they are intended more as a guide to adventurers, will render practical information, which may prove valuable to many who are engaged in the working of sets already established. Most glad we are to aid, in any way in our power, the projects of honest adventurers; and as we feel a duty is imposed on us to impart useful information to those who intend to embark their capital, and to direct them into a fair course, we shall endeavour to do so, by expounding the most approved method of forming and conducting mining undertakings. We shall also occasionally publish a detailed list of the prices of mining materials.

* We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

* It is particularly requested that all communications may be addressed—

TO THE EDITOR,

Mining Journal Office,

26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, FEBRUARY 22, 1851.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all newsagents, at the Royal Exchange, and other parts of London.

In our last Journal, we alluded to the proposed alterations in the American tariff. We then ventured to express a hope that the interested views of a faction would not be powerful enough to carry an enactment which would be detrimental to the general welfare, and we trusted that further advices would have informed us that this interested project was abandoned. It appears that parties are endeavouring to coerce Congress to raise the duty on iron from 30 to 40 per cent.; in addition to this, to charge it on an average cost for the last 10 years, which would be about the same price as iron in England during the railway mania. The expense of importing iron is 27½ per cent. on bar, and 37½ per cent. on pig. The average cost of rails during the last two years has been 5*l.* 14s. 9*d.*, which, with freight, charges, and duty, makes it 8*l.* 7s. 2*d.* per ton. The average price of iron in America, during the last 10 years, can be calculated at 9*l.* 3s. 3*d.*, on which the same rate of expenses, with 40 per cent. duty, amounts to 5*l.* 9s. 6*d.*, which would make the iron cost 14*l.* 12s. 9*d.* per ton, instead of 8*l.* 7s. 2*d.*, thereby levying an extra 93 per cent. on the original cost here.

It has been said that the greatest evils which can afflict a country is class legislation; and though we are prepared for this in the old countries, who are either governed by monarchical institutions or despotic rulers, we must confess that we did not anticipate such a state of things in the "Model Republic," who profess to be the smartest go-a-head nation on the face of the globe. While despotic Russia, together with absolute Austria, acknowledges the doctrine of free trade, and Prussia no longer clings to the Zollverein, Sweden and Norway, with a host of minor states, are revising their tariffs, with a view to a more liberal and extended intercourse with other nations, gradually relaxing the fetters which paralysed the efforts of industry, impeded the operations of commerce, and prevented the development of civilisation, it is curious to observe that a free people, who advocate the doctrine of equality, should be preparing measures to levy a tax on one of the most necessary articles of consumption, the use of which has, in a great measure, raised their country to the high position in which she now stands; in fact, it is almost as great an anomaly as the existence of slavery in a land of liberty.

There are now in the United States 8680 miles of railroad in operation; 10,000 are in progress of construction. Four-fifths of the iron imported is for railroads; and it is a notorious fact that every ton carried over there creates a demand for a large quantity of American iron, to be used in the construction of locomotives, &c. As these roads are not constructed so expensively as in England, the levying of a high duty will virtually prohibit the importation of cheap iron, and many projects must be unavoidably abandoned. These railroads, in many states, are projected and subscribed for by the farmers in the different states, in order to further increased communication, and enhance the value of their property. From 1832 to 1840 rails were free of duty, for the purpose of creating a demand for home produce: the effect was that a large consumption of American iron took place in those years. Should this baneful enactment be carried, the ultimate consequence will be that the generality of ironmasters, and other mineral producers in America, will be ruined, and the ulterior civilisation and progression of the inner states considerably retarded. Who will, we ask, then benefit by this? A few ironmasters of the repudiating state of Pennsylvania, who will be then able to make rails at a great profit to the small number who are enabled to purchase them.

In this cry they are joined by the coalowners of Schuylkill, who hope that the ironmasters will increase their make when English iron is virtually prohibited, and thereby cause a great consumption of their coal. On one of the lines they cite, as an instance of the decrease in their trade, that there was carried in 1848, 252,837 tons; in 1849, 239,290 tons; and in 1850, 207,863 tons. At the same time, although the traffic is diminishing, they are raising a larger quantity of coal, and taking up new collieries—having 169 steam-engines at work, with 4818-horse power in one county. It is not our province to interfere with domestic politics, much less with trans-Atlantic; but we cannot refrain from stating this is not a commercial, but a political movement—its object being to secure the support of Pennsylvania at the next presidential election; and there are, we are

grieved to admit, individuals in that democratic county who will promise, and probably perform, anything, however injurious to the general good, to advance their own interests, and pander to their own vanity and self-sufficiency. A numerous party, however, are opposed to any further alterations in the tariff, than an advance of 10 per cent. on the present duty of 30 per cent., which will then render iron sufficiently dear amply to protect native industry, if such be at all necessary.

We have thus briefly adverted to this important subject. The Americans are fully aware of the value of iron, and the uses it may be put to; probably some of the number who will visit England at the forthcoming Exhibition will see its further appliances; and if he be a staunch Pennsylvanian protectionist, may reconsider his judgment, and pause ere he raises his voice to prohibit the importation of so useful an article in his native country. The question is not yet decided, and will, we should imagine, be fully discussed before it is carried in its progress through Congress. Let it be stripped of the political elements which now surround it, a sound American common sense view of the case taken, and we have no fears whatever for the result, being convinced that no further obnoxious fiscal regulations will be imposed.

It has often been our painful, but imperative, duty, whenever we have observed capital recklessly expended in mining investments, to address a few words of caution and advice to those concerned in the management. We have never, by any means, attempted to dictate to individuals the modes in which they should carry on their operations, or presumed to direct the course they should pursue to attain the desired end; and although at different periods we have seen instances of gross mismanagement, involving both cupidity and ignorance, wherever there have been private undertakings, we have been silent, considering the late Duke of Newcastle's axiom, that every one may do as he likes with his own. But the case is quite different when a company of adventurers are formed for prosecuting any mining enterprise, and the shares are thrown into the market. In most cases the speculators are dispersed in different parts of the United Kingdom—some in the locality where the mine is situated, others at Manchester, Birmingham, &c., with probably a direction in the metropolis to superintend the plant, and work for the benefit of all concerned. As it is obvious that weekly reports cannot be sent to every shareholder, and it is equally as impossible and unnecessary that outlying proprietors can inspect the accounts as they arrive from the mines, so as to guide them either in the sale or purchase of shares; to obviate this, most of the companies have availed themselves of our columns as a medium to disseminate information regarding the workings to the mining world; hence it behoves us carefully to watch over the interests of all, and as far as lays in our power to prevent the insertion of anything which may either depress or exalt the property, to suit the views of interested persons: at the same time, when we discover that such has been the case, it is doubly our duty to expose the imposture, which we have published on the good faith of those who have led us to believe that the report has been a fair and candid one, as far as their judgment went. When to this is combined wasteful expenditure, no resource is left for us but to offer our advice, warn the shareholders of their position, and leave them to take the proper steps to save themselves from loss and disappointment.

It may be in the recollection of our readers that, some time since, we had occasion to advert to the late mismanagement of the East Crowndale Mine. A series of inflated reports were published, which gave every hope that dividends would soon be declared, and that the mine was in a flourishing condition, &c. On investigation, this was found to be exactly contrary to the truth; and great chagrin and dissatisfaction was the consequence. What were the motives which could have induced the issuing of these statements, we are at a loss to conceive. We will hope it arose not from a wilful perversion, but a too sanguine disposition. If the mischief ended only in the disappointment of the shareholders of any mine (though that would be bad enough), the evil would not be so great, but it stretches far beyond; and such exposures tend to damp the spirit of legitimate mining enterprise, and throw discredit on honest persons, who are not in the slightest degree to blame—unfortunately, the world being too prone to act on the Latin adage, "*Ex uno disce omnes.*" The application of this has done ten-fold injury to the mining interest, and renders the speculator now so generally cautious in all his undertakings, thereby preventing the diffusion of capital and encouragement of industry. It is but an act of justice here to add, that a better system has taken place. Under other auspices, the evils hitherto complained of have been remedied; and the property is now favourably progressing, and likely to give that remunerative return to the shareholders which they have so long patiently waited for, and so richly have earned. We sincerely trust that this improvement will continue, and that the mine will be for the future conducted on the same principles which appear now to direct the governing body, convinced we are that in mining, as in every thing else, "Honesty is the best policy."

In another part of our Journal will be found an advertisement relating to some transactions, of a peculiar nature, in the cost-book of Wheal Providence. We may premise that we, and doubtless our readers in common with us, who have for any period been connected with mining affairs, have always regarded the cost-book of a mine as a document of peculiar sanctity, and the entries therein as the sacred evidence of title of all those who embark in enterprises of such an uncertain nature; and, as far as our memory serves, we do not recollect an instance in which any of these unprotected titles have been tampered with or destroyed by the persons to whose custody they have been deposited. The pursers of the mines in the west of England are generally found to be among the most respectable and honourable men connected with the mining interest, and without their concurrence and collusion, no circumstance of such a nature could occur. What is to become of our great and widely-extending mining interest, if the simplicity of the system and the security of the property are to be assailed by the ignorance and dishonesty of those who have become its adherents? We hold as a matter of settled law and indisputable fact, that a transfer of shares in a cost-book of a mine, duly entered, duly executed, and duly accepted, is a document as inviolable as the title deeds of a man's estate, and that the wilful destruction of such a document entails on the offender the liability to similar punishment. We have been at some pains to make ourselves acquainted with the facts, for we regard it as a serious indignity offered to a system we have been accustomed to hold in respect, and as calculated to destroy that confidence in the simple written evidence of mining transactions of great magnitude, which it has always been our aim to foster and promote. The facts, we believe, are clear and simple; the parties who, some months ago, transferred a number of shares, have, as we are informed, by collusion with the person having the custody of the book, destroyed in some manner the evidence of the transfer. More we need not say at present, than that we understand proceedings of a civil and criminal nature are, at this moment, being taken; and for the honour and safety of the interest we represent, we trust that full justice will be done.

Our personal knowledge of Mr. HARVEY for some years is a sufficient guarantee that he will energetically and resolutely defend his own and the general mining interest against such proceedings; and we trust that the lesson which will be read, will operate as an example, and teach others that they must touch lightly that time-honoured and simple edifice, reared up by our forefathers, and defended by honour and integrity for ages—the Cost-book System.

COAL IN NORTH CAROLINA.—A space of 15 miles in length, by four to five miles in width, situated in Moore and Chatham counties, North Carolina, has been lately explored, and unmistakable signs found of a deposit of the best kinds of bituminous, semi-bituminous, and anthracite coal. The deposits extend a distance of 80 miles by four or five miles in width, embracing a space of about 160 square miles. They reach a depth of 7 ft. 2 in.

The discovery of coal in New Zealand had led to the formation of a company, which had already commenced operations with success.

Judgment in the cause, the "Electric Telegraph Company v. Brett," has been postponed, owing to the absence of Mr. Justice Cresswell from London.

THE METAL TRADE—GOVERNMENT RETURNS.

The Board of Trade returns, just issued, in addition to those for the month ending the 5th January, 1851, 1850, and 1849, furnish as with a detailed account of the imports and exports of metals during the whole of the three years. From the subjoined monthly return, which refers to the exports of British and Irish produce and manufactures only, it will be seen that the expansion of movement in this branch of commerce, previously noted under this head, is fully maintained:—

| Metals. | 1849. | 1850. | 1851. |
|---------------------------------------|---------------|---------|---------|
| Iron, pig | Tons 7177 | 5394 | 4569 |
| " bar, bolt, and rod | 21804 | 25576 | 25882 |
| " wire | 209 | 269 | 421 |
| " cast | 956 | 2844 | 3001 |
| " wrought of all sorts | 7030 | 8466 | 8711 |
| Steel, unwrought | 497 | 875 | 726 |
| Copper, in bricks and pigs | Cwts. 15760 | 12973 | 13900 |
| " sheet, nails, &c. (including mixed) | 11343 | 16115 | 22873 |
| " or yellow metal for sheathing | 1019 | 891 | 1615 |
| Brass of all sorts | 1403 | 1624 | 1736 |
| Lead | Tons 534 | 656 | 1747 |
| Tin, unwrought | Cwts. 1779 | 2417 | 1374 |
| Tin-plates | Value £26,894 | £36,309 | £77,983 |

The returns of the exports of metals of home produce and manufacture during the 12 months ending the 5th January last, as compared with the two previous years, more than confirm the results deduced from the monthly statements. In every class (with the exception of pig-iron and unwrought tin, in which there is a falling off) a very marked increase is to be observed. It is, however, most considerable in copper, both wrought and unwrought, lead, and tin-plates.

Of metals, of colonial and foreign origin, the exports during the 12 months of the last three years are as follows:—

| Metals. | 1849. | 1850. | 1851. |
|--|------------|-------|-------|
| Copper, unwrought and part wrought | Cwts. 6224 | 12727 | 16685 |
| Iron, in bars, unwrought | Tons 3433 | 5036 | 5996 |
| Steel, unwrought | 490 | 1208 | 649 |
| Lead, pig and sheet | 3746 | 5151 | 3218 |
| Spelter | 3776 | 4537 | 3423 |
| Tin, in blocks, ingots, bars, or slabs | Cwts. 8339 | 8940 | 3795 |

The large increase that has taken place in the introduction of colonial and foreign produce is fully shown by the subjoined statement of the imports into the United Kingdom during the last three years:—

| Metals. | 1849. | 1850. | 1851. |
|--|----------------|-----------|---------|
| Copper (entered under Act 11 and 12 Vic. c. 127, and previous resolutions) | Tons 35884 | 47433 | 45930 |
| Copper, unwrought and part wrought | 31735 | 51808 | 97706 |
| Iron, in bars, unwrought | Tons 23868 | 29396 | 34066 |
| Steel, unwrought | 348 | 1012 | 49 |
| Lead, pig and sheet | 3789 | 7216 | 11977 |
| Spelter | 13525 | 15915 | 18626 |
| Tin, in blocks, ingots, bars, or slabs | Cwts. 5975 | 35827 | 33332 |
| Quicksilver | Lbs. 1,562,663 | 2,682,592 | 355,079 |

The falling off in the imports of quicksilver is very remarkable.

IRON.—The returns show the total shipments of pig-iron to amount to 347,899L, being a decrease of 19½ per cent. as compared with 1850, and 39½ per cent. as compared with 1849. Pig-iron and unwrought tin, however, are the only articles which show a decrease. The decrease on pig-iron, too, is fully covered by the increase in the other descriptions, so that the total exports of iron in its unmanufactured state show an increase of 5 per cent. on 1850, and nearly 2½ per cent. on 1849. Of wrought-iron of all sorts, the exports of the year have amounted to 1,507,971L, being 8 per cent. more than in 1850, and 23½ per cent. more than in 1849.

STEEL. is returned at 393,659L, being 18½ per cent. more than last year, and 31½ per cent. more than in 1849.

COPPER.—Of manufactured copper the exports were 663,579L, being 5½ per cent. more than in 1850, and no less than 82 per cent. more than in 1849. Wrought copper has increased 3½ per cent. as compared with last year, and 29 per cent. as compared with 1848; and brass is more by 6½ and 47 per cent. respectively.

LEAD.—In lead a very important and progressive increase is to be noticed. The year's exports were 387,575L in 1851, against 287,737L in 1850, and 115,547L in 1849. The rate of increase is thus 25 per cent. on 1850, and 70 per cent. on 1849.

TIN.—Of unwrought tin the exports were 124,801L, showing a decrease of 13 per cent. on last year, and 14 per cent. on 1849; but, on the other hand, tin-plates have increased 30 and 74 per cent. on the same periods. The year's export of this latter article amounts to no less than 928,181L.

The import returns show that this branch of commerce has fully participated in the increase of movement noticed in the export tables.

THE CORNISH STEAM-ENGINE.—The advantages of the simple but powerful and economic arrangement of what is aptly termed the "Cornish" steam-engine, are becoming daily more and more appreciated. They are now in many instances employed in the collieries in the north, and midland counties, and on a late occasion a general holiday was observed at the Hange Colliery, in South Staffordshire, on setting to work one of 130-horse power. This engine was constructed at the foundry of Messrs. Hockin and Loam, Truro. Each stroke of the pump rod raises 56 gallons, so that at the rate of only 10 strokes per minute, it discharges 33,600 gallons per hour, and 806,400 gallons per day, of 24 hours, or 7753 butts, of 104 gallons each. The cylinder is 60 inches in diameter, the piston has a 10-ft. stroke, the beam weighs 17 tons, and the balance bob 15½ tons. There are three boilers, which were supplied by Messrs. Barrows and Hall, of the Bloomfield Iron-Works; they are each 24 feet long, 6 ft. 5 in. diameter, weigh 14½ tons each, and the boiler-plate of which they are composed is half-an-inch thick; the working barrel is 13 in. in diameter, with a 14-inch stroke. Double-beat metallic valves are used, which, if properly finished, are far superior to leather or other packing, and will last for a great length of time without repair. The boilers are covered in, with 18 inches of foundry sand, as a non-conductor, and then built over with brick-work; and there is a steam-chest as a reservoir, 30 ft. long and 2½ ft. diameter, also covered with sand and brick. The whole is so substantially built, that when at work not the slightest vibration is felt. On the occasion of the first trial of this engine, a numerous party of the friends of Mr. Round, the proprietor of the colliery, were present. At the first stroke of the piston, a bottle of wine was dashed at the iron, and the machinery was christened "Neptune," amidst loud cheering. In the evening between 30 and 40 gentlemen sat down to a plentiful repast, and 120 of the workmen were sumptuously entertained at two inns in the neighbourhood.

A LILIPUTIAN STEAM-ENGINE. not exceeding ¼ of an ounce in weight, is being exhibited in full operation in Yorkshire. This ingenious piece of workmanship is intended for the Exhibition.

EAST STONEHOUSE WATER-WORKS.—The Standing Orders were duly complied with, and the bill has been brought in by Mr. Tufnell and the Attorney-General, and read a first time. Parliamentary agent, Mr. T. Harvey.

ARTIFICIAL FUEL.—Attention has been called to a new circumstance in steam navigation—the adoption of a contract for supplying the Cape steamers with artificial fuel. The Government have given the mail contract to the General Screw Steam Navigation Company, and this company has determined on supplying its depots on the west coast of Africa, St. Helena, and the Cape, with artificial fuel. This, which is not a new article, is manufactured by the Patent Fuel Company, under Warlich's patent, and has been successfully tested for steam navigation on several occasions. It is very evident that this year will be a great one in the annals of steam navigation. The extended use of the screw and of auxiliary steam-power, the establishment of an excursion line between Philadelphia and London at \$60 for return tickets, the formation of the Eastern Steam Navigation Company, and the running of larger and more economical steamers to the Channel ports, mark an era in this mode of transit; and as more economical terms will be offered to the public by the companies, so more economical arrangements may be adopted by them. This, we presume, is the reason why the screw company have adopted Warlich's fuel. This composition, we find, is now coming into extensive use, and large works for its manufacture are established at Swansea for the Welsh coalfield, at Middlesbrough for the great northern coalfield, and at Deptford for the metropolitan districts. The company have likewise depôts in many places abroad.

A BOLD CHALLENGE ACCEPTED.—Messrs. Thomas Tucker and Co., of Liverpool, ship-builders, have offered to accept the American challenge, to construct a sailing ship of any size, to compete with one of Yankee build; and the owners of the winning ship to gain the losing one.

LARGE CASTINGS FROM DUBLIN.—The castings for the bridge over the Wye, at Chepstow, for the South Wales Railway, are being executed by a firm in Dublin, which we believe is the first instance on record of castings of any magnitude being made in Dublin for works in England or Wales. The enterprising firm who are doing this work have lately made all the castings for the Brighton Railway Company, required in the extension of their passenger terminus at London-bridge, and have exported to England during the last two years upwards of 800 tons of castings.

SPAIN AND ITS MINERAL DEPOSITS.

Madrid stands as high as the town of Inspruck, which is situated in one of the highest defiles of the Tyrol. The elevation of Madrid is fifteen times greater than that of Paris, three times that of Mount Valerian, and three times that of Geneva. According to Mr. Thalacker, the mineralogist, the palace at St. Ildefonso, in the environs of Madrid, is 593 fms., which is higher than the edge of the crater of Mount Vesuvius. No other monarch in the world is possessed of a palace in the regions of the clouds. The mean temperature of Madrid is 59° Fah.; Paris, 53° 56' 30"; Naples, 63° 30'. The rock on which the castle at Alicant stands is calcareous, and abounds with fragments of fossil shells; but the sierra to the north is composed of schist. About two leagues from this is a calcareous mountain, called Alcoray, in which are found cinnabar and red gypsum; also in the mountains between Valencia and San Felipe. At the foot of a mountain near the latter place is a mine of mercury, said to have yielded from a quintal of ore 13 lbs. of mercury, 21 lbs. of copper, and 18 lbs. of sulphur and arsenic—together, 52 lbs., and 1-128th part of silver. Another vein of mercury, in a clayey soil, only 2 feet in depth, crosses the city of Valencia from east to west. Cobalt is found near Ayodari; alum near Castel Favi; oere between Villena and Biar, and a beautiful white alabaster; amber in small quantities in the mountain Alcoray; and quarries of the finest marble in many parts of this province.

The mountains of Cuenca invite the researches of the geologist. Laborde mentions several large caverns; one called Cueva de los Griegos (cave of the Greeks), or Belvalle, near Masegosa, 40 ft. high, and of unknown depth, contains some remarkable stalactites; not far off is the Cueva de Hierro (iron cave), supposed to be the remains of a mine, as is that of Cueva de Pedro Cotillas, containing some very remarkable stalactites. Another spacious cavern, called Cueva de las Judias, is found near Bonaco.

Strabo affirms that Galicia had been peopled by Greek colonies; the companions of Hercules had settled there; both Phoenicians and Greeks visited this coast to trade for tin, which they drew from this country as well as from the Casseterides. In the granite ridges, which stretch as far as Cape Ortegal, the common tin ore is discovered, which is worked by the inhabitants of Galicia.

Almaden is the last village in La Mancha, being separated only by a brook from the kingdom of Cordova; it stands upon a stratum of cinnabar; the inhabitants are chiefly supported by the profits of the quicksilver mine, worked from time immemorial. Theophrastus (300 B.C.) speaks of the cinnabar of Spain; Vitruvius also mentions it; and Pliny states that the mines were in the province of Beticia, which would agree with this mine. Lead and silver mines, iron, and emery, are found in the Sierra de Guadalupe, near Orellana, and at Zalamea, in the heart of the Sierra Morena. The country people believe that the latter town was built by persons sent here by King Solomon, in quest of the silver mines. Guadalcanal is the last town to the south in Estremadura, being separated from Andalusia by the small stream of Benalija. Its silver mine has a long history attached to it, and has ruined more than it has enriched. In the reign of Philip II, two brothers, Christopher and Mark Fugger, of Augsburg, obtained a grant of this mine and the quicksilver one at Almaden; they made so large a fortune that "ser rico como un Fucar" (to be as rich as Fugger) had become a proverb in the day of Cervantes. There is a street at Madrid which bears their name. Their descendants were raised to the dignity of princes of the Roman Empire, being allied to the greatest houses in Germany. The brothers abandoned both their mines in 1635, after having worked that of Guadalcanal to a great depth, and in less than a month the mine filled with water to within 30 feet of surface. The draining of Pozo Rico (the rich shaft) has been the project of many, and has absorbed the property of various speculators. The last unfortunate explorers were Cornish miners, under Capt. Mitchell, late of Lanivet Consols, sent out by a London company. Mr. J. Rule, of Camborne, during the last year inspected the property. It has baffled the scientific miner, taken in the Scotch, robbed the Irish, and deceived the Welsh, and all the northern speculators. The vicinity of Oporto, in the neighbouring kingdom, is mountainous, exhibiting many traces of metallic ores, and along the south bank of the river indications of productive veins of copper.

THE GOLD FIELD IN CANADA.

Having lately returned from Canada, passing through the lower country, I was fully satisfied that the extensive gold region in that country was making excellent returns; and by comparing them with what was being done in California, I found they were quite equal to the latter—only, of course, on a much more limited scale; and while the papers are teeming with news from the "diggings" of California, the gold region of Lower Canada appears little thought of, although the former country is 16,000 miles off, and a soil the English nation have no direct interest in; whilst the latter is at present an appendage to the British Crown, and 12,000 miles nearer. The gold is found from the size of a few grains to pieces of 1 lb. weight and upwards; I have known a person, unaccustomed to washing, equal many of the most celebrated day's work in California. The gold is generally imbedded in rock, which, on being broken up, gives forth the precious metal. It is found from the surface to the depth of 15 ft., and a square mile contains upwards of 3,000,000 square yards; and, if worked to the depth of 15 ft., each square mile will require 15,000,000 square yards to be quarried, and in a country (say 20 miles by 10) containing something like 30,000,000 square yards. Here would be a pretty little job for some of our unemployed labourers for the next 50 years at least; all the unemployed labour in Great Britain would not make any impression on it. In that climate labour could be carried on for about 200 days in the year. In the winter months labourers could be advantageously employed in timbering and working in the copper and iron mines lately discovered, about 25 miles distant from the gold field. The former is probably the largest vein known, being about 18 ft. by 10 ft., exposed to the surface of the rock for a considerable distance. Iron (native) only requires breaking up and welding, excellent horse shoes having been turned out of the raw ore.

These mines have been in part disposed of to some half-dozen spirited individuals in Quebec, numbering, amongst others, one or more members of the fair sex: probably not another dozen people could be got to take shares, unless they could be certain of digging out the ready-stamped dollars. Why are the people of Canada so much behind their Yankee neighbours, who keep a sharp eye on them? A flood of gold diggers into Lower Canada would possibly swamp the preponderance of the old Canadian settlers, with their black-petticoated gentry, that at present encumber the land. Some such convulsion appears needful to their existence as an independent country—"Something is rotten in the state of Denmark." What that may be is not my present business to point out. The evil exists—or why is she slumbering whilst her neighbours are wide awake? Mayhap the habits and customs of European officials, with large salaries, do not assimilate with the ideas of people in a new country. It is impossible to describe that change of feeling; it can only be felt to be understood. These, coupled with the habits of the old Canadian race, may account for her tortoise-like steps.

At the forthcoming Great Exhibition, splendid specimens of the gold will appear, which may probably draw the attention of capitalists to this quarter, and certainly a more favourable opening never occurred.

I shall avail myself of an early opportunity to supply some more detailed particulars on the subject; but not having met with any account of the existence of gold in Canada, I considered this brief notice would, at least, prove interesting to your readers; and it may, probably, draw forth further information from others on what must be considered an important matter.

PAINÉ'S HYDRO-ELECTRIC LIGHT.—We mentioned, some time since, when that gentleman was requested to exhibit his apparatus before a scientific committee in Boston, he declined, not assigning any reason for his refusal; lately his brother has addressed a letter to a friend, in which he says that everything as stated has been correct, except its safety. The water is decomposed, or resolved in its gaseous state, in abundance, but nine severe explosions have proved that it cannot be safely used. The great difficulty is found in governing the electric currents in their accumulations and discharge, or at the electrodes—the continuous varying state of the atmosphere baffling all mechanical skill that has been brought to bear on the discovery. With a certain electrical state of the atmosphere the apparatus has been known to work well; but immediately that a change of excess would occur, repulsion would take place at the electrodes, and they melted like wax. A few days previous to the examination, a cold clear morning, the decomposing jar exploded like a six pounder, and, therefore, the experiment could not be tested. Mr. Paine, during the last 18 months, has been endeavouring to remedy this evil; he believes he has now succeeded, but his friends fear another disappointment.

* Our correspondent is in error. The mine filled with water in the course of two or three days; the Fuggers abandoned the mine, to avoid Government inspection, which was about to take place; it having been suspected that, for a long period, they had been defrauding the Government of the royalties.

Original Correspondence.

THE IRON TRADE—FOREIGN TARIFFS.

SIR,—Whilst newspapers and letters from America alike concur in stating that the tariff will not be altered this session, and if deferred stands little chance of being increased, so as to meet the wishes of Protectionists (which, by-the-by, implying as it does that "as they grow older, so they will grow wiser"), cannot be a very palatable remark to Yankee conceits. It is no less a matter of surprise than of gratification that our continental neighbours should all at once become such ardent advocates for reduced duties, particularly as applied to iron—that important article of commerce, the claims of which to public attention have been already so ably advocated by your Journal. Not only have Russia and Austria—the confines of barbarism in Europe—somewhat relaxed the pressure on the sides of their wincing jades, yclep'd "dearly-beloved subjects," or children, when the taxes were unusually oppressive, and Prussia's Premier officially declared that "henceforth the Government will give up the system of protection," taking care, however, with accustomed duplicity, to retain the valuable (?) services of Von der Heydt, who is even not averse to turn free-trader, if it enable him still to keep his *porte feuille*, but, *O! mirabile dicta*, the *Journal des Débats* now advocates free-trade in France, and begins to find out where the shoe pinches, remarking very truly, that "the Bey of Tripoli, and the semi-civilised chief of the Sandwich Isles, are, as regards commercial policy, infinitely more liberal than the Model Republic, which prides itself on its 'liberty,' and would be an example worthy of imitation by other States." For the iron trade of this country, it is to be hoped that "la belle France" will no longer place herself under a commercial ban. Why will she not accept our rails, when we offer them to her at "only 5L per ton?" Why will not she construct her fine war-steamer (if she must and will have them) of English boiler-plate and angle iron, if she can get them cheaply? Why should not French horses feel quite as comfortable, and be quite as fleet on English horse-shoes as on French ones, to say nothing of the extra "sous" that such saving in public and private expenditure in the item of iron alone would bring into the nation's pocket; and, consequently, make less frequent and destructive those periodical convulsive throes of anarchy and misery which may, in a great measure, be traced to the protection of national indolence?

We owe it to ourselves—we owe it to our trade—we owe it to the cause of truth and justice to congratulate our neighbours on the movement towards free-trade; and if from countries so overdone by protection, as are Russia, Austria, Prussia, France, and Spain, influential voices are heard arousing the people to a sense of their danger, and of their destruction, should they not endeavour to stem the torrent which hurries them on from bad to worse? Surely, the free and enlightened children of Uncle Sam will never risk their "wide-awake" reputation by desiring a return to that system which the experience of Europe has found to be fatal to a country's real interests. The advocates of free-trade in iron in America, as elsewhere, seem happily to have met with such unexpected success, that our foreign trade bids fair to convince even a sceptical M.P. that it is no "phantom," and quite worth looking after. The only question is, could we ourselves not do more to make it so? Could we not strengthen and add to the array of talent advocating moderate tariffs in other countries, and thus expedite that "turn in the affairs of men," which would give new life and activity to those branches of our own trade on which foreign legislation has a more immediate depressing tendency? If this can be done, why bewail depression and "bad times," when energy and confidence alone are requisite to assist in conquering the evils under which we labour.

London, Feb. 19.

IMPROVEMENTS IN THE BLAST-FURNACE.

SIR,—It is nearly 11 years since I introduced to the notice of the iron-masters my patent for regulating the heat of the blast of air, and protecting the heating pipes from the too violent action of the fire. A hope that I might be able to introduce the plan, and make it answer, was all the encouragement I got. In no instance did I obtain an order, or even permission to make a trial; and I gave up, as many before me have done, all hope of doing any good, either for the patent or the trade. About a month since, I was much gratified, in passing some large iron-works, to find my plan in full operation, although I have reason to believe neither my invention or patent were known to the proprietor. In reply to my inquiries, he assured me the saving in slack was very important, but that the great advantage was in the protection it afforded to the pipes, it being impossible to burn or overheat them, as well as to the regularity in the temperature of the blast, the heat at all times being uniform and constant. These are advantages too well known to the trade, and speak sufficiently for themselves. The plan consists in taking advantage of the expansion of the syphon pipes. One of the main pipes is a fixture, and the other is placed on rollers; and as the syphon pipes are acted upon by the fire, they open and close, thus increasing or diminishing the distance between the mains. The movement of the free main pushes forward a rod, which works a suitable lever, connected with the damper in or at the top of the chimney, and, by closing it more or less, regulates of itself the intensity of the fire—the only care required is to keep the bars clean, and plenty of fuel on the grate: the whole being self-acting, is not under the control of the workman, and, therefore, not influenced by his neglect or inattention. S. W. SMITH.

Ettingshall, Feb. 17.

ON THE USE OF CAUSTIC LIME, INSTEAD OF LIMESTONE, IN BLAST-FURNACES.

SIR,—The use of caustic lime is a very important feature, especially in this district, South Staffordshire, as the supply of the stone (the mountain limestone) is both cheap and abundant; yet it is found necessary to mix with it a large proportion of other limestone, brought from distant places at considerable expense, and which adds proportionally to the cost of the iron. We have two beds or measures, one about 15 ft. thick, which is what is used in the furnace. The other bed lies about 40 yards lower, and is about 35 feet thick; it is finer in the grain, much softer, and more variable in quality; it is used for lime making, for which purpose it is preferred. It is very probable this thick measure, when calcined, would answer every purpose for iron making, and render the district independent of other supply; it has been tried in the raw state, and causes the furnace to work cold and sluggish, and otherwise interferes with its proper action. The evil I apprehend to arise from the small quantity of sulphur which it contains, and which would be driven off by calcination, as I have observed the top of lime kilns show traces of sulphur when this stone is being burnt: it is of the utmost importance that the lime more especially should be sweet and pure when put into the furnace, as it not only acts as a flux, but performs other very important offices, in giving the iron a grey or mottled appearance, and forming also a sulphate of lime, by absorbing any sulphur given out by the fuel under combustion, and thus protecting the iron from this poisonous and pernicious enemy to the trade. It appears from Mr. Mitchell's papers, published in your Journal about two years ago, that an almost inappreciable quantity of sulphur causes both red and cold shortness, and also makes the iron white, and I feel little doubt but such is the fact; hence the care and suspicion evinced by the furnace manager to use only such lime as is well calcined or burnt—a process which not only renders it less fusible, but frees it from both its carbonic acid and the sulphur with which it is always more or less combined. Suitable kilns might be erected at a trifling cost to burn the stone, and the saving of labour in breaking, added to the saving of fuel in the furnace, would give a profit over the present system. The cost of breaking the stone, as now used, is an important item (and I have rarely seen it broken so small as it should be), and worth far more than wheeling it into the kilns. The saving of fuel in the furnace would much more than compensate for the slack used in calcining. The lime would be sweet and pure, and produce a much better flux; and what is of still more consequence, the iron would be of a better and more regular quality.—S. W. S.: Feb. 17.

DRESSING OF LEAD ORES.

SIR,—In your last week's Journal, you mention that Captain Matthew Francis, at the Allt-y-Crib Mine, has adopted an alteration in the dressing of lead ores, which, when properly known and appreciated, may probably be followed by others. Capt. Francis will be conferring a great benefit on your readers, if he were to particularise his improvement. I have now before me an elaborate and long statement, drawn up by M.M. Rivot and Zeppenfeld, of the dressing of the silver-lead ore at the works at Pontigbaud, in Brittany. As this comprises some 30 pages, it would be impossible for me to think of trespassing on your good nature for its insertion. It appears by this that the mineral, after it is produced from the mine, goes through an infinite number of processes (I believe 23), which are described with that nice theoretical minuteness for which our continental friends are

famed. The prills, which contain from 60 to 70 per cent. of galena, are at once sent to the smelting-works. The remainder is thrown on a riddle, through which a stream of water passes; those that do not go through are spalled, the prills subtracted, and the dredge again thrown on the riddle. From thence they pass down an inclined plane to a table, where they are picked by females, who are provided with boxes to contain the prills yet remaining, and dredge, the attle being thrown away. The contents are here ground, and passed through water. The washing gives four different products—rich slimes, poor, waste, and the fine particles, which fall to the bottom of the sieve. The sand, which is deposited on the top, is afterwards washed at tables by females; and it appears here that shaking tables, on the German method, are used. After this it is subjected to the process of stamping and buddling, and the products classified under several heads. With all the nicety with which this appears to be conducted, it would seem that, though but little lead is thrown away in the attle, yet a considerable portion of silver is wasted, which cannot be saved in these innumerable dressings. It is remarked that, however agitated the water may be during the processes, a little sulphate of iron thrown in, in a few moments renders it clear.

I shall be happy, at any future time, should this letter not be sufficiently lucid, to explain any portion of the manipulation as stated there; as it is, I have merely given a short detail, in order to show how beneficial any improvement would be that could abbreviate so long and tedious a process as that I have endeavoured feebly to describe.—C.: Paddington, Feb. 18.

THE JARROW COLLIERY—THE VIEWERS' REPORT AND THE INSPECTOR.

SIR,—The whole coal trade has been much interested, and somewhat disturbed, at the exposure of the proceedings at Jarrow in your Journal. It is not for me to give a professional opinion upon it; the facts are clearly before the trade and the public, and every one can judge for himself; but, as one of the profession, I would like an explanation of a part of the report of Messrs. Anderson, Wood, and Forster, which at this moment strikes me as being somewhat unprofessional. It is reported generally in the trade that these gentlemen, while they expressed dissent from the suggestions of the inspector, though they agreed on his principle of supplying the east workings with more air, yet they did not, while down the pit, examine the points at issue, nor did they seek an interview with him, or invite him to be present—a professional practice, and a fair one, to say nothing of what is reasonably due to a Government officer.

They took, it is said, the *ex parte* statement of those who resisted his suggestions, and for which purpose they were summoned to Jarrow to aid in this resistance, without seeking an explanation, or knowing exactly if his suggestions had been really understood and efficiently carried out.

To become critical in that position, under such circumstances, was very critical indeed. It is generally known now, that the inspector has demanded the grounds on which they acted, and of their report, but in vain; and that, unable or unwilling to explain them, Messrs. Anderson, Wood, and Forster, refer him to Mr. Jobling, and Mr. Jobling refers him back again to Messrs. Anderson, Wood, and Forster; and so the mine is pilloved, in the meantime, in uncertainty and danger.

If these gentlemen would resist Government inspection, a more dignified, just, and honourable mode should be adopted. There cannot be two opinions upon this point. They were invited by the Jarrow viewer to pronounce an opinion, upon which depended the safety of the colliery and the lives of the people, guided by the quantity of air passing into the eastern workings, and the combined practice of safety-lamps, naked candles, and blasting pursued by that viewer. This investigation was confined to these points—unless, indeed, they had chosen to add the suggestion that all the difficulty would be removed by an increased quantity of air to the whole mine, through the "steam-jet" or "another pit." Instead of confining themselves, however, to their professional limits, they travel out of their course to fire a shot, amounting almost to a blasting with a naked light, upon the inspector behind his back. The inspector, constrained by official duty, cannot, I presume, enter the lists in defence of his views; but it, therefore, the more becomes these gentlemen to investigate carefully and express clearly what they meant—not insinuate what they could not substantiate; and, having been officially called on to explain fully everything bearing upon the points at issue, in duty to their own professional honour they are bound to give it. As to the condition of the pit itself, after the exposition it has received, it is not difficult to draw a conclusion or two. While attention is being concentrated on the eastern district by the viewer and his professional friends, let them take care the enemy does not suddenly take them in the rear, as has been already suggested. The Corporation and western districts, losing their supplies and neglected, will evidently soon become foul. There can be no doubt, from the nature of the west workings, that they have already been foul since the Jarrow discussion began, owing to the air withdrawn from them; nor would it surprise me to learn that the gas from them has shown itself even at the Corporation furnace. They have got their air to the eastern district from the Corporation district, either by lessening the furnace of the latter and increasing the other, or by a door in the main way.

The first mode will operate in equalising the short supply, and will perhaps keep the east workings below firing point, if no sudden discharge of gas comes off; or if a fall of the atmospheric pressure with a south wind does not occur; or if the furnaces are not neglected; if any of these circumstances take place a general discharge of gas in all directions will occur, and the whole air in the Corporation district will rise to a very dangerous point. Should a door, on the other hand, have been adopted, which I suspect, and the furnaces still equally pressed, it will render matters, if possible, still more critical. For should, by any accident, this door get deranged, and instead of 2 or 3 ft. ajar, it be set entirely open, or be closed by a passing boy or pitman, in the first case the air will be drawn away from the dangerous eastern district, which will receive a reduced supply of not more than 4000 to 5000 ft., as I see it was in its dangerous original, risking everything. Or, in the latter case, by the door being closed, the Corporation workings will be nearly rendered dead, and will foul to firing point in a very short time. In either case, and on all sides, I can see nothing but causes of apprehension; and if the advice of no unfriendly friend would be taken, I would urge that Jarrow should be worked with nothing but lamps, and then with every precaution, for her very furnace* are on the confines of danger. A more dangerous mine, in a more critical position, it must be admitted, cannot be found in the northern district.

Newcastle, Feb. 18.

A VIEWER.

THE JARROW COLLIERY.

SIR,—I, in common with all those whose sentiments beat in sympathy for the cause of humanity, acknowledge my grateful obligations to your intelligent correspondents, "M." and "A. B.," for their intrepid *exposé* of the impending dangers of Jarrow Colliery.

Coming events cast their shadows before.

If these adumbrations of a prospective Providence remain unheeded, or are but "lightly esteemed," it is clear to my simple understanding that a fearful amount of criminality attaches. I have not now to learn that there may be not only a mental obliquity of vision, but a moral ossification of the heart. I fear the circumstances connected with the officials of the Jarrow Colliery supply only a too painful commentary.

I have no hesitation to say that, to blast the coal in Jarrow Colliery, in the state in which it is represented to be, is an outrage on the intelligence which ought to conduct its operations, and an unpardonable recklessness of consequences; such is my individual conviction.

To require the signatures of the workmen, under the circumstances stated, is, to my mind, a palpable evidence of guilt, however ingenious may have been the trap. The device, to say the least of it, was an unworthy one, and that, I had supposed, from which an honourable mind would have shrunk. With the fear of past explosions in that very dangerous mine before their eyes, we would think all causes of danger would be removed, and redoubled efforts for security made. Surely, this would be more rational than venting spleen on the poor collier, alarmed by threatening danger, and anxious for self-preservation.

After these notes of warning have been thus faithfully proclaimed, what remains, if proper means are not employed to avert the calamity, when the explosion comes with its hecatomb of victims, but the appalling verdict of WILFUL MURDER? Such are my private sentiments on the subject.

Broadstone, Stranraer, Feb. 19.

J. MURRAY.

THE SALE OF ARSENIC.

SIR,—I sincerely rejoice to see that Government seriously means to restrict the sale of arsenic—the source of poisoning in 19 cases out of 20, suicidal and accidental. It has been hitherto obtained, and that without hesitation or scruple, under the most shallow and flimsy pretences. Farmers procure it to form a steep for their grain, when it is notorious other mate-

rials, and those innocuous, would do equally well. Carelessness in the subsequent disposal of the vessel and residual arsenic are the fruitful sources of innumerable accidents; while the game poisoned by the seed corn, by becoming the food of the cottager's family, aggravates the evil.

Any individual, known or unknown, may obtain this envenomed material on any plea whatever, real or pretended: to destroy "vermin," is the common cuckoo song, and, perhaps, "white mercury" is the name assigned to it. The ordinary druggist has no business with it. The "tasteless aque drop," or Fowler's solution of arsenic (arseniate of potassa), is happily now supplanted by quinine, and we can dispense with poisoned candles. Arsenic comes within the province of the colourman, as in the preparation of Scheel's mineral green, not that of the druggist; and for the requirements of the laboratory, the manufacturing chemist can supply it. I hope the measure will be a most stringent one, and that arsenic henceforth will only be sold under a proper guarantee, and to persons responsible for consequences.

Broadstone, Stranraer, Feb. 18.

J. MURRAY.

ATMOSPHERIC INFLUENCES.

SIR,—My object in making remarks on Mr. Coxworthy's first paper under the above heading, was to guard him, on the threshold of the subject, from being led away by imperfect data. A wrong description of the state and order of the rocks, especially in the primary series, not only destroys the conclusions or inferences drawn, but damps the interest for following the argument.

Having been much pleased with many of his previous observations, I feel a desire that the hypothesis which may be brought forward will fairly apply to actual conditions. Mr. Coxworthy "has endeavoured to show, how, under the influence of these principles, &c., the foundation of lime was originally laid on the granitic base." Mr. Coxworthy is under the impression that all the limestone rests on granite, like the coatings of an onion; nor is he singular in this opinion. On reference to my great sections of the Andes, one of which was lately published in the *Transactions of the Geological Society*, he will observe that the primary limestone is frequently enclosed in the granite, and very commonly in the primary schists, like quartz veins, &c.

We have large beds daily forming on the flanks of the porphyritic granites, from calcareous springs oozing out of the crystalline base. The sedimentary limestone is frequently formed from the decomposition of the calcareous feldspar. We have, again, recent veins of calcareous matter intruding from the crystalline base into the fractures and seams of the superincumbent bedding. These, and numerous others which may be observed in different parts of the world, and which are now going on, show the necessity of actual observation, and great caution in forming theories. The British Isles do not display a good section of the primary suite of rocks.

I hope Mr. Coxworthy will take the hint in a proper spirit, and, by timely revision of his labours, lead them to something more than a mere theory. Although I cannot help repeating that the description given of the calcareous matter is a sad contradiction to the actual conditions of the calcareous rocks, yet I trust something good will turn out from Mr. Coxworthy's investigations.—EVAN HOPKINS: Tavistock, Feb. 13.

ATMOSPHERIC INFLUENCES.

SIR,—Your correspondent, Mr. Coxworthy, asserts that "sand is clearly an original formation, and not the detritus of former rocks." The generality of your practical readers, who live in the sandstone districts, are well aware that what we call sandstone, and especially the "old red," is from fine grain to large pebbles, being often a massive conglomerate of granitic pebbles, gneiss, quartz, fragments of hornblende, slate, &c. I have seen sand storms on the plains of Suez, but I have never yet heard of an hail-storm of boulders and pebbles. I think a visit to this district would enlighten your correspondent on the nature of sandstone formations.

Dumfries, Feb. 12

G. G.

THE ORIGIN OF ORES IN LODES.

SIR,—The public will, doubtless, be much indebted to Mr. Rowlandson for exposing "the spurious science," which has fostered itself on the mining public." But in doing this he must show that he is at least practically acquainted with the subject *underground*, and must bring his arguments to bear strictly on the question at issue.

I am well aware that sulphurets can be exposed to great heat without decomposition, more especially in retorts, or close vessels; indeed, we form mixtures in assaying, smelting, and amalgamating, to ensure the perfect decomposition of the bi-sulphurets, and we convert metallic iron into a sulphuret by precipitating the metallic lead from its sulphuret.

I still cannot see what that has to do with the argument. The question is on the formation of the sulphuret of lead in a moist rock; and how could such a rock be exposed to a melting heat, in the presence of lime and other alkalies, without effecting decomposition.

Miners never go to a volcano to look out for ore; they prefer going to springs of water. A dry lode is exceedingly unpropitious. The pumping power is often an indication as to quantity of ore. Under the influence of preconceptions and old prejudices, the evidence of the sight is often unavoidable, and we know that some people fancy that almost every black stone is lava. A fused sulphuret may resemble the original in composition, but not in the larger or more perfect crystallisation.

We are now living in an age when people exercise a little more reflection, observe carefully, think for themselves, and will not take everything for granted, merely because the assumptions have been suggested by great chemists, and other classes of philosophers. Discoveries are now almost daily made, tending to alter old cherished doctrines. It is to be hoped that those who "travel and study," do so to render themselves more competent to judge of things as they are, and not merely as simple conductors of other peoples crude and ill-digested notions.

Your correspondent's disposition is like his experience, somewhat fiery. We, of the aqueous natural laboratory, find the alkalies not only good menstrua for dissolving and reproducing minerals, but also very excellent cooling drafts. I recommend Mr. Rowlandson to study their actions in the system, and I have no doubt he will derive great benefit from their useful effects, in more ways than one.

I trust a few more visits underground will enable Mr. Rowlandson to judge more correctly of the conditions of minerals in lodes, without the necessity of referring to the authors quoted. Should we meet to discuss these matters, I hope I shall find Mr. Rowlandson equal to his task; he will then be better able to judge how far I am qualified to meet him, be it on the German, French, or English system of mining and smelting, &c.

Austinfriars, Feb. 12.

ALBERT DUMARESCU.

THE CRYSTAL PALACE—LATE DESTRUCTION OF GLASS.

SIR,—I can obtain no satisfactory account of the cause of the late destruction of glass in the Crystal Palace. It is a question of very serious import, and what has occurred once may happen again. The "sum and substance" of the catastrophe is thus described:—"On a sudden the glazing of about 1000 square feet gave way, but not in the usual way when glass is blown in; for it rather seemed to be the effect of an eddy than of a direct current of air." That the phenomenon was an electrical one, I cannot doubt. The Crystal Palace was, in fact, the victim of an electric blast, or whirl. Safeguards should be erected around the structure on the principle of the paragrêles, to discharge the electricity of the atmosphere, and prevent its accumulation. The friction of the atmosphere over so extensive a surface of glass in a storm must rouse into activity an incalculable amount of electricity, which cannot be sufficiently promptly carried off by the iron supports; moreover, iron is a bad conductor of electricity compared with copper.—J. MURRAY: Broadstone, Stranraer, Feb. 18.

ERRATA.—In my letters of last week, read *entoza*; egregious; belemnite; or (not on).

INVENTIVE INEQUITY.

SIR,—It is generally known that the Duke of Northumberland has offered one hundred pounds as a prize for the best invention of a life boat, and it is also said that there are two hundred competitors for the prize! This reflection is fraught with melancholy interest—at least, it is mournful to me. His Grace's boon is an emanation of the exercise of philanthropy; but it is surely painful to think that it requires a lure of 100*l.* to excite and rivet inventive genius to the means of saving human life from destruction—a sorry price for the lives of thousands! No doubt 100*l.* would be a grateful boon to genius struggling with poverty, thus roused to mental activity by the fond hope that the prize may haply be his. This, too, is "vexation of spirit;" for "many run, and only one obtains the prize."

When I consider the all but universal abuse of wealth, and reflect how beneficially the "riches of liberality" might be employed in thus eliciting means and projects for preserving and saving life, and otherwise ministering to the wants and wishes of humanity, and inasmuch as it is not done, I blush for my species. This also is "vexation of spirit." Ah!

the "luxury of doing good." Happy the man who possesses the will and power to raise genius, struggling with poverty, from the dust, and fan into a flame that which was "ready to die." The sentiment of the immortal Milton can never be forgotten.

J. MURRAY.

Broadstone, Stranraer, Feb. 19.

INVENTORS' AID ASSOCIATION.

SIR,—Having had repeated applications made to me by mechanics and foremen of works, as to whether the association would allow of half share, so that they might be enabled to rank amongst its supporters, I shall feel obliged by your giving publicity to the following resolutions, passed by the managing committee of the association, on Wednesday evening, the 19th inst., Charles Watt, Esq., in the chair:—

"That this meeting considers it expedient to reduce the price of shares from 10*l.* to 5*l.* each share, and that they be reduced accordingly."

"That the secretary send a copy of the foregoing resolution to every shareholder, and state that it will be at the option of such holder to apply for a receipt for double the number of shares, to compensate for the reduction in the price thereof now made; and that, unless an intimation to the contrary be forwarded to the secretary, on or before Wednesday, the 5th day of March next ensuing, every shareholder will be credited with double the number of shares at present allotted to him in the books of the association."

Beaufort-buildings, Strand, Feb. 20.

WILLIAM M. ROBERTSON,

Secretary.

THE PATENT LAWS.

SIR,—In your Journal of the 8th inst., you refer to my arguments against the scheme of Patent Law propounded by the Association of Patentees for the Protection and Regulation of Patent Property, and you state that I must be labouring under a misconception; for if the synopsis of Mr. Lund be correct, it will be found that 50*l.* only is to be paid in the first instance. Now, I admit that the plan set forth by the committee of the association and that of Mr. Lund, one of the members of the committee, having so many features in common does create great difficulty in determining what the committee is responsible for, and what Mr. Lund is responsible for; and I have, therefore, referred to Mr. Lund, and find that I was right in stating that 100*l.* is the sum to be paid down in the first instance, according to the plan put forth by the association—the 50*l.* payment being Mr. Lund's own plan. But whether 50*l.* or 100*l.* be the first demand on the inventor, my argument against anything but a trifling sum being demanded in the first instance remains unanswered; and I must repeat it, that provisional, interim, or preliminary protection, at an outlay of a few shillings at most, is the first and greatest step to be taken in patent reform, unless indeed, patents are to be awarded for nothing.

The argument in favour of engraving and printing 500 copies of specifications, at the cost of the patentee, I must demur to. We are told, I take it, not to seek to change the patent system, in order to carry out certain ideas as to forms and procedure, but to obtain substantial benefits for inventors; therefore, it is not a question whether the patentee pays more or less for enrolling his specification at present; but the question is, what charges he may be reasonably asked to bear—i. e., the lowest charges; but, in fact, he is not obliged to pay so much under the present system as the cost of engraving and printing would put him to, because he may have a patent for England alone, Scotland alone, or Ireland alone; when I will stake my reputation that he will be able to prepare and enrol his specification at a far cheaper rate than under the proposed system. Again, the time and trouble required to engrave and print the copies will be fully equal to that required by the present routine of forms, in obtaining and specifying letters patent.—F. W. CAMPBELL: Patent-office, Strand, Feb. 14.

STEAM-CARRIAGES ON COMMON ROADS.

RESPECTED FRIEND,—A party having, as I think, made very erroneous conclusions relating to our circular upon steam-carriages on common roads, by assuming an unreasonable data, permit me to solicit the favour of your inserting the following observations thereon. I do not think it reasonable to conclude that, supposing that a steam-carriage, capable of conveying 30 passengers, was established (say) on the road from London to Bristol (120 miles), it would only convey at the rate of three persons every 12 miles, when it is more than probable it would be three or four times that amount. Our statement was that what may be termed a maximum, by assuming the addition of parcels, goods, and luggage altogether might produce an amount equal to 30 passengers travelling the whole distance at 1*d.* per mile. I will now give what may be termed a minimum—viz., 10 passengers the whole distance, and two for every 12 miles, which make the whole number 30; the first 10 will produce, at 10*s.* each, 5*l.*; the other 20, at 1*s.* each, 1*l.*; luggage, &c., 1*l.* 10*s.*—which make together, 7*l.* 10*s.*: allowing for interest of capital, expenses of working, and management, 9*d.* per mile, would be 4*l.* 10*s.*—leaving a balance in favour of profit, 3*l.* or more than 50 per cent. on the cost. So that it appears that, if we can obtain seven passengers for the whole distance, and 30*s.* for parcels, &c., to say nothing for short passengers, we should even then not only cover our expenses and interest, but have a surplus for a dividend of a much larger proportion than is at present made by the most profitable existing railway.

I have lately had an interview with a party who for many years was bookkeeper to one of the principal four-horse coaches that used to run from Bristol to London, and he informed me that their coach conveyed nine passengers outside and six inside, and that the average number of what they termed long passengers—viz., those who travelled the whole distance—was full one-half; and, in his opinion, we might safely calculate upon 15 passengers the whole distance, and at least upon 30 short ones—say, of 12 miles each. And as it is but reasonable to charge a somewhat higher rate for short journeys, we will say 1*d.* per mile, this would give for long passengers, 7*l.* 10*s.*; short ditto, 2*l.* 5*s.*; parcels, &c., 1*l.* 10*s.*—making together, 11*l.* 5*s.*: deduct expenses, 4*l.* 10*s.*—leaves a balance towards profit of 6*l.* 15*s.* per day. I, therefore, think that the time will come when passengers may, and will be, conveyed by steam on the common road from London to Bristol, at the speed of from 10 to 12 miles per hour, for a charge not exceeding 5*s.*, 7*s.* 6*d.*, and 10*s.* each; and that if a full complement of passengers is continued, at a much lower rate, and still afford ample profit; and my firm belief is (however contemptuously railway engineers and directors may treat the idea), the time will come when they will be compelled to make a large reduction in their charges, and submit to a diminution of the number of their passengers as well; and that to the complexion I have held up to view they must largely approximate at last, and be finally convinced that they have not yet arrived at the point of *ne plus ultra*. The most plausible objection I can imagine against our statement is that relating to our estimate of expenses; we will, therefore, allow for a large contingency—say, one-third, or about 33 per cent.; this will make the costs 1*s.* per mile to convey 30 passengers. Let us then suppose eight long passengers at 10*s.* each, 4*l.*, and 22 short ones at 1*s.* each, 1*l.* 2*s.*, parcels, luggage, &c., 1*l.* 10*s.*—this will make 6*l.* 12*s.*: deduct 120 miles at 1*s.* per mile, will leave 12*s.*, or 10 per cent. on cost, equal to 35 per cent. dividend on capital employed. This we need not be very apprehensive about opposition by railways. Besides, there are local advantages which railways do not possess, such as the resident population on and near the road; in addition to which, we shall not have such a millstone round our necks as is the case with existing railways, occasioned by wild, extravagant, and useless expenditure, the ruinous consequences of which I predicted many years ago, and did all in my power to check; whilst our burden would be light, and if the traffic diminish, we can correspondingly diminish our burden; not so to any material extent can railways do. But, after all, whatever be the result of the attempt on the existing roads, there is one plan by which these favourable results may be more than obtained, and beyond the possibility of doubt, in my opinion—viz., by the adoption of timber tracks on the plan we have patented, and which is in a degree now being adopted in America, which the following extracts from a New York paper will prove:—

PLANK ROADS.—We observe that the attention of the people in this and other states is being attracted to the utility of plank roads. The Reading papers have suggested the construction of such roads from that city to Lancaster. In Bucks county, also, the people have held meetings upon the matter; they are said, wherever they have been made, to answer every purpose. That our readers may judge of the cost and profit of such roads, we insert the following from one of our exchanges:—The Waterville and Utica road, 19 miles long, and costing \$34,000, has just declared a dividend of 10 per cent., payable to the stockholders on demand, and 10 per cent. laid by for expenses. The Utica and Bridge-water road, 20 miles long, costing \$45,000, pays 25 per cent. regularly. The Boonville road pays 22 per cent. The Watertown road pays 25 per cent. The Fonda and Johnson road, four miles long, costing \$8000, pays regularly 15 per cent.

In confirmation of the advantages of such roads, I may state that the late Walter Williams, of Bristol, one of the largest—if not the largest—mail and stage-coach contractors in the kingdom, once commissioned me to offer a party that, if they would lay down a perfect track on the side of the road from Bristol to Bath (12 miles), he would contract to find coaches, horses, and drivers, and deliver for them passengers from the centre of one city to the centre of the other for 3*d.* each. Now, if he could profitably do this (and he was a good judge), what is to prevent its being done at less than one-half by steam—steam-power being only one-fourth the cost

of horse-power? I will now conclude, by observing that I have, for upwards of 40 years, advocated the construction of railways, and in 1809 entered a caveat at the Patent-office for an improved railway, and for carriages to be worked thereon (which M. Poole, Esq., at the Patent-office, can confirm); but such was the apathy, or prejudice, in the public mind, that I could get no one to favour the project. I have, nevertheless, paid considerable attention to the subject up to the present time; and, notwithstanding the taunts and sneers to which I have been, or may hereafter be, exposed from engineers and others, who may have obtained wealth and fame by means which I should consider unjust and dishonourable, yet will I persevere, clinging as I do to the favourite motto—"Nil desperandum, veritate duce, et auspice Deo."

Stangate, Lambeth, 2 mo. 12.

STEAM BOILER VALVE.

Sir,—In answer to Dr. Murray's communication on this subject (Feb. 4), I beg to inform him that safety-valves are invariably made of brass, and I do not know an instance where iron safety-valves are made by any engine builder. Many of the boiler explosions are supposed to arise from the safety-valve being "gagged," which, in some cases, no doubt is true; but the greater portion are occasioned by a deficiency, or over supply, of water in the boiler; and lastly, by boilers of improper construction, over-weighted to increase the power of the engine.

The present or similar improved locomotive boiler ought only to be employed where steam is generated above 10 lbs. pressure to the square inch, and in all cases the outer shell of the boiler should be a recipient of small diameter. The water should be maintained at one uniform level, that the strength of the iron may not be impaired by exposure to the action of the flame, whenever the water is lower than the top of the flue.

With two safety-valves to a boiler, properly constructed (one under lock and key), the suction pipe of the feed pump having a descending column of water to open the lower valve by gravity, and an engine man attentive to his duty, an explosion could not occur; and this is amply confirmed by the locomotive engineers of the present day, to whom such accidents are almost unknown.—AN ENGINEER: *Erewash Valley, Feb. 19.*

DEELEY'S PATENT FOUNDRY FURNACE.

TO JOSEPH DEELEY, ESQ., GYNNIE HOUSE, TINTERN ABBEY, MONMOUTHSHIRE.

DEAR SIR,—We beg to inform you that we have now had your Patent Foundry Furnace at work for six months, and have much pleasure in informing you, that its operations far exceed our anticipations; the iron melted in these furnaces is fit for any kind of work—it is so fluid that we can run any description of castings, light or heavy. The quantity of coke required per ton with us is 2 cwt. 3 qrs. 19 lbs. at light work, such as small three-legged pots, &c.; of course, if applied to heavy work, the quantity required would be much less—the loss in weight in melting is half a cwt. per ton. We can with confidence recommend your Patent Furnaces to all who study economy.

Statement of a Day's Work of Ten Hours, with One Furnace.

| | | | | | | |
|--------------------------------|-------|------|----|----|----|----|
| Coke charged | | Tons | 2 | 18 | 2 | 0 |
| Iron charged | | " | 20 | 0 | 14 | 45 |
| Melted iron | | " | 19 | 9 | 2 | 0 |
| Iron left in bottom of furnace | | " | 0 | 1 | 0 | 0 |

As we intend erecting a third furnace upon a larger scale than the two present ones, that will melt at least *thirty tons in ten hours*, you will oblige us by sending a set of drawings, with all other particulars, as soon as possible.

Springbank Iron-Works, Miller-street, Glasgow, Feb. 8.

THOMAS ALLAN & CO.

STEAM TO INDIA AND CHINA, via EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS AND LIGHT GOODS TO CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS AND RECEIVE GOODS AND PARCELS FOR THE ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 20th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th, 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and Oriental-place, Southampton.

STIRLING'S PATENT YELLOW METALS.—Adapted for SHEATHING, BOLT STAVES, BOLT NAILS, DECK NAILS, as reported on by the late Mr. Owen, Supervisor of Metals to the Admiralty; also for PROPELLERS, FRAMEWORK SCREWS, PISTONS, CYLINDERS, COCKS (particularly where there is exposure to corrosion), RAILWAY CARRIAGE AXLE BEARINGS, and for all machinery subject to friction.

Messrs. GARDEN & MACANDREW, 34, Dowgate-hill, London.

Messrs. JOHNSON, 166, Buchanan-street, Glasgow.

Applications for licenses and other information to be addressed to the undersigned, at Garden and Macandrew's, No. 34, Dowgate-hill. ALFRED BARRETT, Manager.

INVENTORS' AID ASSOCIATION.—(PROVISIONALLY REGISTERED).

BANKERS.—Messrs. Spooner, Attwood, and Co., Gracechurch-street, London.

SOLICITOR.—George Fitch, Esq., 23, Southampton-street, Bloomsbury.

The capital of the Association to be raised by shares of £5 each.

Applications for the remaining shares to be made, accompanied with a reference, to the Secretary, at the offices of the Association, of whom also prospectuses and every information can be obtained.

The Secretary will be happy to wait upon any gentleman who may favour him with an interview, to explain the object and intentions of the Association.

The Committee are prepared to appoint Agents in the provincial towns, on application (with references) being made to the Secretary of the Association.

5, Beaufort-buildings, Strand. WILLIAM M. ROBERTSON, Secretary.

UNDER BRITISH AND FOREIGN LETTERS PATENT.

HUTCHISONISED STONE, BRICKS, &c.—TO LAND PROPRIETORS, ENGINEERS, ARCHITECTS, &c.—THE SOFTEST STONE, CHALK, GYPSUM, CLAY, SAND, &c., INDURATED AS HARD AS GRANITE—will never vegetate nor disintegrate, being impervious to atmospheric action, &c.

For all Foundations, external and internal Buildings, Docks and Sea Walls, Sewerage, Paving, Decorative and Monumental Work, the HUTCHISONISED MATERIALS are unequalled for durability and low cost.—(See Testimonials and Prices.)

PASTEBOARD, SOFT WOOD, and other ABSORBENT MATERIALS, rendered WATERPROOF, and impervious from weather, vermin, &c.

LICENSES GRANTED ON LIBERAL TERMS.

Apply to Wm. HUTCHISON, Hutchisonised Stone Works, &c., Tunbridge Wells, Kent.

CRAFTURD HOUSE

CLASSICAL, MATHEMATICAL, & CHEMICAL SCHOOL, MAIDENHEAD, BERKS.

In this School it is sought to combine the development of the physical, moral, and intellectual powers, with the acquisition of knowledge, and to make the course of study an introduction to the pursuits of life.

Crafturd House, with spacious dormitories, dining, school, and play rooms, was erected four years ago, expressly for educational purposes; and since that time the establishment has been exempted from illness. The situation is elevated, in the vicinity of the Thames, the scenery extended and picturesque, the air bracing, and the grounds comprise 14 acres.

Besides the usual studies of Classical Schools, GERMAN and FRENCH are spoken; the latter language daily, with the assistance of natives, until four o'clock. Mathematics are taught, theoretically and practically; there are drawing and singing classes. Physical science is pursued progressively, and the recently erected laboratory is devoted to chemical analysis, now so essential to the miner, agriculturist, and manufacturer.

Mr. J. D. M. Pearce, A.M., will be happy to forward prospectuses and references in answer to applications.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES AND CLOCKS.

E. J. DENT, 82, Strand; 33, Cockspur-street; 34, Royal Exchange (clock tower area), Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6s. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8s. to 12s. each.

DENT'S PATENT DIPLIDOSCOPES, or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use, 1s. each, but to customers gratis.

COUGHS, ASTHMA, AND INCIPENT CONSUMPTION

ARE EFFECTUALLY CURED.—KEATING'S COUGH LOZENGES have been proved by long experience to be equally efficacious and powerful in those severer forms of pulmonary affections—asthma, incipient consumption, chronic bronchitis, and spasmodic cough—as in the milder, but often not less troublesome disorders of the throat and chest, winter cough, hoarseness, difficulty of breathing, and irritation of the throat, &c. Their entire freedom from all deleterious ingredients and opiates, whilst it renders Keating's Cough Lozenges a safe remedy for the most delicate female or youngest child, has caused them to be held in the highest esteem by public speakers, clergymen, and professional singers; but, perhaps, the high approval which is bestowed upon these lozenges by some of the most eminent of the faculty, is the best and most convincing guarantee of their safety, efficacy, and purity.—Prepared and sold in boxes, 1s. 1d. and 2s. 9d., 4s. 6d., and 10s. 6d. each, by Thomas Keating, Chemist, &c., No. 79, St. Paul's Church-yard, London. Sold retail by all druggists, and patent medicine vendors in the kingdom.

IMPORTANT TESTIMONIAL.

Sir,—Having been troubled with a very bad cough for the last eight months, I applied to Mr. Hammon, chemist of this town, for some relief; he recommended me your "Cough Lozenges," which I am happy to say cured me in a week. I beg most cordially to recommend them, and request you will not hesitate to make this letter public; such a valuable remedy cannot be too highly recommended.

JOHN HILL, Bart.

GREAT POLGOOTH MINING COMPANY,—

ST. AUSTELL, CORNWALL.

ON THE COST-BOOK PRINCIPLE.

Under which, amongst other advantages, every shareholder possesses the power to terminate his own responsibility on any day he pleases.

IN ELEVEN THOUSAND SHARES.

COMMITTEE.

THOMAS H. LONGDEN, Esq., Hyde-park-place.

JOHN BROWN, Esq., 10, King's Arms-yard.

GEORGE THOMAS, Esq., Manager, Winchester-house, Old Broad-street.

F. C. BROWN, Esq., 15, Old Jewry Chambers.

Visiting Superintendent of Mining Operations—Captain John Puckey.

Bankers—London and County Joint-stock Bank, No. 21, Lombard-street.

Solicitors—Messrs. Coode, Browne, and Co., 10, King's Arms-yard.

OFFICES.—WINCHESTER HOUSE, OLD BROAD-STREET.

This long-known and extensive MINE is situated near ST. AUSTELL, CORNWALL, and is held under renewable leases for 21 years, from 1846, 1847, and 1848, at the low rate of 1-24th dues. Even this rate has been reduced for some time to 1-48th only, in consequence of the large outlay of capital by the lessees, and no doubt is entertained that the reduction will be continued for a considerable further period.

In all previous workings great returns have been obtained; and in the present working, from January, 1846, to December, 1850, the sales of tin have amounted to more than £89,400, of which the year 1846 (while the workings were merely preliminary) yielded but £1750—consequently, in the last four years, the tin sales, exclusive of copper, have amounted to £87,650. In 1850 the tin realised above £23,000, or nearly £2000 per month; the state and character of the mine, and the extent of tin ground opened, and in course of opening, justify the most confident expectation of much larger monthly returns.

The foregoing produce has been obtained principally from the present eastern runs of tin in the eastern ground, and at above the 76 fathom level; the 84 and 96 fathom levels are progressing towards the same runs of tin, and have a favourable aspect; the same, intersections have, at every level above, yielded very large returns. The other runs of tin in the eastern ground, but west of those above described, have been alike productive in a former working, and are gone down rich below the 96 fathom level. Taylor's shaft is almost down to the 110 fathom level, between these several courses of tin, and a short extension of levels east and west from this point will be calculated to open out the same resources as were obtained in the levels above.

In the western part of the set, at Boskilling and Poldice, the operations may be regarded as in maiden ground; the 40 fathom level, at Boskilling, judging from the appearance of the lode, and its near approach to the elvan course and other intersections, and also from the fact that the same lode, in an adjacent part of the set, has, at a former working, yielded extensive returns (there having been at one time a shaft, raised from a shallow level, tin ore of the value of £30,000), great and immediate expectations of success are entertained. In this case, if a course of tin is discovered, and rich stones of tin and some tin ground have been opened, it would be in whole ground to the surface, and any such discovery would, judging from all the experience of past workings, increase the present monthly returns of tin to 50 or 60 tons, at an almost inappreciable extra cost.

The Great Polgooth Mine, during the last four years, has given a profit over working cost of about £13,000, notwithstanding the low price of tin and other disadvantages. The mine, at her present depth of 110 fathoms, must be considered as yet in her infancy. From the shallow levels in every part, large returns have been made in former workings—the present workings have demonstrated that the rich courses of tin ground eastward extend to the deepest point yet reached, and continue downwards, having been passed over in the 84 and 96 fathom levels. This part of the mine is now so advanced, that the expenditure of a few hundred pounds in driving exploratory cross-cuts would lay open numerous lodes at various points of intersection. The discovery of a course of tin at any one point (and according to the universal experience of the mine such discoveries should be almost unfailing at each intersection) would add to the returns, as to place a large available profit at the disposal of the proprietors. These numerous prospects of discovery, or any rise in the price of tin (which may advance in consequence of the increasing consumption of that metal, while there are no new sources of supply yet discovered), a better mode of dressing, rigorous economy in the purchase of stores, a more judicious arrangement of the tin sales, are all so many features in favour of the undertaking—any one of which would augment the present monthly receipts, and which, combined, bid fair to increase the profits to the extent of some of the most remunerative of British mines.

The lodes are many and large—the intersections of elvan courses and slides, and of the lodes with each other, are numerous; the courses of tin have usually been from 40 to 60 fathoms in length, whilst the lodes varied from 6 to 12 feet wide, and the character of the tin is known to be of a distinctive and superior quality to ordinary mine tin.

The tributes are low, the last five years averaging 7s. 2d. in the lb.; the last 12 months about 5s. 6d. in the lb. only.

The machinery and plant, and permanently useful works, have cost upwards of £44,000—the two first are most ample, of the best description, in perfect working order, fully competent to the drainage of the mine to a much greater depth, adequate for all surface operations, and for returning 80 tons of tin monthly. There are 7 steam-engines, 10 water-wheels, sets of stamps for 250 heads, with every other requisite on a proportionate scale, and about 700 persons are now engaged on the operations of the mine.

Besides being one of the best tin mines in the county, there are promising copper lodes, but they have not been actively prosecuted—£700 worth of copper ore has, however, been sold.

This property has, since 1846, been in the possession of four gentlemen as a private undertaking. They have embarked a much larger capital than they originally contemplated in bringing it to its present state; and for this reason, and with a view of securing the full development of their views, they are induced to dispose of a portion of their interest at £3 per share. A very favorable opportunity thus presents itself of entering into a concern, all the preliminary difficulties and uncertainties of which have been overcome.—The mine, free from all liability, and with a working capital of £5000 in hand, is divided into 11,000 shares; of these a large portion is retained by the present proprietors, and taken by influential parties here and in Cornwall.

Applications for the remaining shares, at £3 per share, payable in two instalments, as follows—viz.:

£2.....per share on allotment.

£1.....per share on the 5th May, 1851.

may be made to Messrs. Johnson, Longden, and Co., stock and sharebrokers, No. 22, Tokenhouse-yard, London, of whom prospectuses, and every information, may be obtained. The average profit of the mine, taking credit for sums paid as capital, in the last three months has been about £200 per month; and, according to the united testimony of Captain Puckey and other eminently qualified and disinterested parties, with a working capital of £5000 in hand, there is no ground whatever for apprehending that further money will be required at any period; but that, on the contrary, in a short time the mine will be placed in a permanently dividend-paying state; as the capital, so far as may be necessary, will be applied to the further developing and extending the underground works, all profit over the ordinary working costs will at once accrue towards the dividend fund. January, 1851.

It may be further satisfactory to parties applying for shares to know, that this prospectus has been submitted to Captain Puckey, and approved by him as a faithful description of the property.

GREAT POLGOOTH MINING COMPANY.

To the Committee of Management.

I agree to purchase 11,000 shares in the above undertaking, and to pay £2 per share on allotment, as specified in the prospectus, dated January, 1851.

Name

Address

Date

GREAT POLGOOTH MINE, ST. AUSTELL, CORNWALL.

In 11,000 shares.—Deposit £2 per share.

IN consequence of the tin shares applied for, NO FURTHER APPLICATIONS WILL BE RECEIVED AFTER FRIDAY NEXT, the 28th inst.

Prospectuses, in the meantime, can be obtained and applications for shares made to Messrs. Johnson, Longden, and Co., stock and sharebrokers, 22, Tokenhouse-yard, London.—Every information may be obtained from Messrs. Heseltine, 2, Hercules Chambers, Stock Exchange; Mr. George Thomas, of Winchester-house, Old Broad-street; and Messrs. Coode, Brown, and Co., solicitors, 10, King's Arms-yard, London.—Feb. 22.

THE FOREST COPPER AND SILVER-LEAD MINING COMPANY, DEVON.

ON THE COST-BOOK PRINCIPLE.

In 6000 shares, of £1 each—all paid-up.

Certificates will be issued to secure shareholders against any further call, or liabilities of any kind.

JAMES FORSYTH, Esq., 77, Cornhill.

HENRY BROWN, Esq., Blackheath Park.

JAMES OWEN, Esq., Gray's Inn-square.

(With power to add to their number.)

Bankers—Messrs. Barnett, Hoare, and Co., 62, Lombard-street.

Secretary—Mr. J. Marshall, 29, Threadneedle-street.

The capital is considered ample for every purpose, and will enable the committee to erect the required machinery without loss of time, and bring the mines into a profitable state. There is an abundant supply of water, which can be used for the machinery without the heavy expense of steam-power.

As many rich and valuable mines have been abandoned, in consequence of shareholders neglecting or refusing to pay their calls, it has been determined to have a paid-up capital, and no further liabilities.

Prospectuses and shares may be obtained on application to Mr. J. Guillemard, stock and sharebroker, 3, Bartholomew-lane; at the offices of the company, 29, Threadneedle-street, London; or of the following brokers:—Mr. B. S. Stock, Bristol; Mr. N. Lea, Birmingham; Mr. E. Speakman, Manchester; Mr. Pearce, 9, Dale-street, Liverpool; Mr. B. Jones, Preston; Messrs. Flint and Co., Hull; Mr. Ironside, Sheffield; Mr. Beardslow, Leeds.—No application for shares will be received after Monday, the 3d March.

FAT WORK TIN MINES.—SAINT COLUMB AND SAINT ENODER, CORNWALL.—In 6144 shares, of £1 each.

TO BE CONDUCTED ON THE COST-BOOK SYSTEM.

MANAGING COMMITTEE.

HENRY M. HAVILLAND, Esq., Ivy House, Uxbridge.

GEORGE PEARCE POCOCK, Esq., 10, Norfolk-street, Strand.

WALTER CHARLES URQUHART, Esq., Gray's Inn.

HENRY E. DRAYSON, Esq., Palace-yard, Westminster.

STEPHEN BROAD, Esq., Rye Hill, Peckham.

Bankers—Messrs. Williams, Deacon, and Co., London.

Solicitors—Messrs. Tucker and Sons.

Secretary and Purser.—Mr. R. C. Manuel.

TEMPORARY OFFICES.—42, FISH-STREET-HILL, LONDON.

These MINES are situated in the united parishes of ST. COLUMB and ST. ENODER, in the county of CORNWALL, about half a mile from the north road leading from Bodmin to Truro, 12 miles from the former, and about the same distance from the latter, where the Exeter and Falmouth mails pass daily.

The grant is for 21 years, from 1850, at a royalty of 1-16th for all tin raised above the adit (which is 27 fms.), and 1-18th for all tin raised below it.

The Fat Work Mines have been worked, and are found to be a beautiful strata of granite and Kellas, and from whence great quantities have been got of an excellent quality.

The Mines are suspended only for want of efficient machinery to keep out the water, and during the last period of working a profit of £1000 was realised in three months from the eastern shaft only.

The present proprietors are willing to take £1144 as compensation for the work done, or one-half of that amount in free shares, if the Company think best so to determine.

It is proposed to erect a steam-engine of sufficient power to pump the water and crush the tiniferous ore, as recommended by Captain Symonds in his report.

Prospectuses, containing full particulars, with forms of applications for shares, may be obtained on application to Messrs. Smith and Sons, 7, Bank Chambers, Leithbury, London; or to the Secretary, at the offices of the Company, 42, Fish-street-hill, London.

APPLEDORE SILVER-LEAD AND COPPER MINE,

ST. IVE, CORNWALL.

Divided into 1024 shares.—Dues One-Fifteenth.

CONDUCTED ON THE COST-BOOK PRINCIPLE.

COMMITTEE OF MANAGEMENT.

GEORGE RICH, Esq., Falmouth.

GEORGE BATTERS, Esq., St. John's Wharf, Westminster.

THOMAS TORKINGTON, Esq., Gravesend.

BANKERS—Devon and Cornwall Bank, Liskeard; Barclay, Bevan, and Co., London.

PURSER—Edward Anson Crouch, Liskeard, Purser of West Caradon.

MANAGING AGENT—Robert Dunstan, Captain of West Caradon.

This set is granted by Wm. D. Horndon, Esq., at 1-15th dues, and extends about a square mile, and near to the most productive silver-lead mines in the county—namely, Wheal Mary Ann, Trelawny, Venton, Tremane, and other rich and dividend-paying mines. There are five parallel lodes running through this set, and two copper lodes—the former are from 3 to 12 feet through, composed of rich gossan, muddled, candied spar, floucan, peach, prlan, with spots of lead, in a light blue kellas, being most congenial for silver-lead, and every indication to warrant a rich deposit of ore in depth. The metalliferous district of this set, together with the relative position which it bears to the rich and productive silver-lead mines in this neighbourhood, is too well-known to require further description than given in the following REPORTS:

Jan. 18.—In accordance with your request, we yesterday carefully inspected one portion of this set, which we found to be very extensive. We saw one strong, regular, and well-defined lode, running north and south; its width is about 24 feet, its underlie east, and although it does not produce so much gossan, where opened, as is seen in some lodes, the stratum of ground in which it is located is very congenial for silver-lead, and the situation is extremely favourable, as the lode by its underlie falls into a large concave valley—the stratum of which is a soft clay-slate, in which experience has taught us our most productive and profitable lead mines exist. We ought not to omit to state, that we were told by others, that there are two other lodes discovered in this set, but the heavy rains which fell at the time we were there, and the late hour of the day, prevented our examining the whole set. So, to conclude, we beg to state, that taking the set in all its connections, first, a large strong north and south lode, which is situated in a stratum of ground very congenial to the metal sought; and after looking at what we deem the leading features of this set, we do not hesitate to state that but few new concerns present more of what is considered promising indications than is to be seen at Appledore, and as such we have no hesitation in stating that it holds out considerable promise of making a large and good mine. The set is extensive, and the neighbourhood, Callington, one of mining celebrity.

JAMES OSBORN, Wheal Venton.

Jan. 27.—Having recently inspected, or rather surveyed, this set, I beg to hand the following report thereon.—This set, which is very extensive, is situated in the parish of St. Ives; it lies on the western side of the River Lynher, and directly south of Bicton Wood Consols, the north and south lodes in this set, Appledore, being a continuation of the eastern lodes in Bicton, where they have been traced to some considerable distance, and present very fine appearances in this set, and also, where opened on the backs, show themselves to be large and well-defined, being composed of gossan and quartz, and located in a beautiful soft kellas, which is in every respect congenial to the produce of lead. There is also an east and west lode, the appearances of which are well worthy of attention, and from the back lead is said to have been taken. Judging from the whole of the features of this set, as far as a surface survey can admit of, I deem it well worthy of an effectual trial, but I should recommend, as preparatory to any permanent operations, that the lodes be opened on the backs throughout the set, in order that their character and relative position may be more clearly ascertained, and the best spot selected for commencing effectual operations.

ROBERT DUNSTAN, West Caradon Mine.

Jan. 30.—In conformity with my promise to you, I yesterday inspected that portion of this set which I had not before seen, and am happy to inform you that I saw another large north and south lode, which produces fine gossan, is situated in a stratum of soft clay-slate, and it is said intersected by a caunter lode, near the spot where I saw the principal opening; but as the pits said to contain the caunter were not cleared up, we, of course, could not state what it is in them. But I can, without hesitation, say the north and south lode is one of considerable promise, being of a good size and appearance, quite in a lead district, having the Callington lead mines on one side, and the Menheniot ones on the other, and this being situated about midway between both, gives it a favourable position, and the appearance of the lodes and the general strata being the same as in those mines, I see no reason why the same causes will not produce the same effects. Fully aware that we cannot divest mining of the uncertainty which attaches to it, and equally certain that experience has taught us many things that serve for guides (though not infallible) in forming our judgments as to directing our operations, and as far as I can see in it, appearances are strongly indicative of a productive mine at Appledore.

JAMES OSBORN, Wheal Venton, Liskeard.

The testimony of the above experienced and well-known agents, and now managing two of the most productive and best dividend-paying mines in this locality, is sufficient guarantee for the favourable results likely to ensue.

Application for the remaining shares (two-thirds having been already apportioned) to be made to Thomas Fuller and Co., Threadneedle-street, London, where every information may be had, and plans and specimens seen.

PRICES OF MINING SHARES.

It being difficult to obtain a correct knowledge of all the mines in our list, we trust that agents, and others interested, will assist us by forwarding any additions, or corrections, with which they may be acquainted—our object being to present it as accurate as possible. We have also added a column to note the actual business transacted; but which, without the constant assistance of brokers and agents, cannot become so complete as we could wish. The desirability of such a record is generally admitted, and we invite the co-operation of all parties concerned, in rendering it perfect.

| Shares. | DEVON DISTRICT. | Paid. | Last Price. | Transactions. |
|---------|---|--------|-------------|---------------|
| 2000 | Aylesborough (tin), Shepperton | 2 | 2 | |
| 4000 | Bedford United (copper), Tavistock | 2 1/2 | 7 1/2 | 7 1/2 |
| 1200 | Birch Tor and Vetter (tin), Dartmoor | 10 1/2 | 4 | |
| | Bottle Hill (copper), Plympton | 1 | 1 1/2 | 1 1/2 |
| 1024 | Borlington Park (silver-lead), Plympton | 1 | 4 1/2 | 4 1/2 |
| 4000 | Devon and Courtenay Consols (copper) | 1 1/2 | 1 1/2 | |
| 1024 | Devon Great Consols (copper), Tavistock | 1 | 270 285 90 | 285 |
| 750 | Devon Great Tincoff (North Bovey) | 1 | 6 | |
| 250 | East Birch Tor (tin), North Bovey | 4 | 3 | |
| 2048 | East Crowdale (tin), Tavistock | 7 1/2 | 3 | |
| 4000 | East Gunnis Lake Junction (copper) | 4 | 1 1/2 | 1 1/2 |
| 9000 | East Tamar Consols (silver-lead) | 1 1/2 | 1 1/2 | 1 1/2 |
| 2048 | East Tamar George (cop.), Walkhampton | 1 | 10 | |
| 512 | East Wheal Josiah (copper), Tavistock | 1 1/2 | 1 1/2 | 1 1/2 |
| 4000 | East Wheal Russell (copper), Tavistock | 1 | 4 1/2 | 4 1/2 |
| 1024 | Exmoor Eliza (copper), South Molton | 2 1/2 | 5 | |
| 1000 | Hennock (silver-lead), Hennock | 2 1/2 | 2 1/2 | |
| 1024 | Kingzett and Bedford (lead and copper) | 3 1/2 | 2 1/2 | |
| 1743 | Lanheroon Wheal Maria (copper and tin) | 1 1/2 | 1 1/2 | |
| 6000 | Map Down (silver-lead), Combarmin | 1 | 1 1/2 | |
| 1024 | New East Crowdale (copper and tin) | 2 | 2 1/2 | |
| 1024 | North Wh. Robert (copper), Walkhampton | 2 | 2 1/2 | 3 |
| 1000 | Peter Tavy and Mary Tavy (copper) | 2 1/2 | 8 10 | 7 8 |
| 512 | Plymouth Wheal Yeoland (tin), Plymouth | 6 1/2 | 6 | |
| 2048 | Runnaford Combe (tin), Tavistock | 2 1/2 | 3 1/2 | |
| 250 | South Friendship Wh. Ann (copper and tin) | 30 | 28 30 | |
| 250 | South Molton (lead) | 12 1/2 | 8 | |
| 1024 | South Plain Wood (copper), Ashburton | 3 1/2 | 7 | |
| 5000 | South Tamar (silver-lead), Beer Ferris | 1 | 2 1/2 | 2 1/2 |
| 2000 | Tamar Consols (silver-lead), Bagenalton | 4 | 5 1/2 | 5 1/2 |
| 687 | Tavy Consols (copper), near Tavistock | 8 | 3 1/2 | 3 |
| 1024 | United Mines (copper and tin), Tavistock | 10 | 10 | |
| 1024 | West Down (copper and tin), Whitechurch | 2 | 1 1/2 | |
| 1024 | West Wheal Friendship (copper) | 3 | 3 | 3 1/2 |
| 4000 | West Wheal Russell | 1 | 1 1/2 | |
| 1070 | Wheal Adams (lead), Christow, Exeter | 13 1/2 | 16 | |
| 1024 | Wheal Carpenter (tin and cop.), S. Sydenham | 1 | 1 1/2 | |
| 1024 | Wheal Cropper (copper), Tavistock | 2 1/2 | 4 1/2 | 5 |
| 1024 | Wheal Embury (antimony and lead) | 3 | 5 | 5 6 |
| 1024 | Wheal Fawcett (copper), Tavistock | 4 1/2 | 3 1/2 | 5 |
| 764 | Wheal Franco (copper), near Tavistock | 13 1/2 | 13 15 | 9 10 |
| 126 | Wheal Friendship (copper) | 120 | 120 | |
| 1024 | Wheal Hamlyn, near Oakhampton | 1 | 1 | |
| 2048 | Wheal Harris (lead), near Tavistock | 1 | 1 | |
| 2000 | Wheal Langmaid (lead) | 1 | 1 1/2 | 1 1/2 |
| 1024 | Wheal Mary Ann (copper), Bridestow | 1 | 1 1/2 | |
| 5000 | Wheal Providence, South Sydenham | 1 | 2 1/2 | |
| 4000 | Wheal Russell (copper), Tavistock | 1 1/2 | 8 1/2 | 1 1/2 |

EAST CORNWALL DISTRICT.

| | | | | |
|-------|--|-------|-----------|-------------|
| 1024 | Appleton (copper-lead and cop.), St. Ives | 1 1/2 | 1 1/2 | 1 1/2 |
| 3550 | Bawdon (silver-lead) | 4 | 4 | |
| 250 | Borrow (copper), Liskeard | 2 1/2 | 5 | |
| 1024 | Bodmin Consols (lead), Wadebridge | 4 | 4 | |
| 5000 | Bodmin Moor Consols (tin and copper) | 1 | 4 1/2 | |
| | Bodmin Wheal Mary (copper) | 5 | 6 1/2 | |
| 812 | Butterton (lead), Menheniot | 2 1/2 | 10 1/2 | 10 1/2 |
| 1000 | Callington (lead and copper), Callington | 2 1/2 | 6 1/2 | 7 1/2 |
| 4000 | Calstock United (copper) | 5 | 5 | |
| 1156 | Caradon Great Cons. (cop.), Liskeard | 7 | 3 | |
| 1536 | Caradon Vale (copper and lead), St. Ives | 1 1/2 | 7 | |
| 3000 | Cartwheel Consols (cop. & lead), Wadebridge | 4 | 4 | |
| 250 | Chyprasse, St. Enoder, Cornwall | 3 | 25 30 | |
| 500 | Comblawn (lead), Callington | 8 | — | |
| 2000 | Combe Valley Quarry (lead), St. Glennis | 3 | 6 | 6 |
| 311 | Craddock Moor (copper), St. Cleer | 2 1/2 | 7 | |
| 2500 | Drake Walls (tin and copper), Calstock | 6 1/2 | 3 | |
| | Duke of Cornwall | 3 | 3 | |
| 1024 | East Polgoth (tin) | 6 | 7 1/2 | |
| 1024 | East Sharp Tor (copper) | 5 | 5 | |
| 1000 | East Trevellick (tin), Lantret, near Bodmin | 1 | 2 1/2 | 2 1/2 |
| 256 | East Wheal Kaseh, Lantret | 40 | 30 | |
| 400 | Fowey Consols (copper), Tywardreath | 40 | 30 | |
| 250 | Gonnamon (copper), St. Cleer | 46 | 15 | 15 17 1/2 |
| 1024 | Great Sheba Consols (tin and copper) | 4 | 13 | |
| 5000 | Great Wheal Martha (cop.), Stoke Clims | — | 1 | |
| 3072 | Great Wheal Mitchell Cons. (cop.), Lanivet | 3 | 5 | |
| 612 | Gr. Wh. Rough Tor Cons. (cop.), Camelford | 29 | 20 | |
| 5000 | Grown Slat Consols, Camelford | 5 | 5 | |
| 1024 | Hawkmoor (cop.), Calstock, Gunnis Lake | 5 | 4 | |
| 6000 | Hedgerton Consols (tin and copper), Calstock | 2 1/2 | 4 | |
| 512 | Heraford (lead), near Liskeard | 2 1/2 | 12 12 1/2 | 12 13 |
| 1000 | Holmbush (lead and copper), Callington | 24 | 22 1/2 | 20 22 1/2 |
| 6000 | Marble Valley (copper), Caradon | 10 | 3 1/2 | |
| 250 | Mineral Court (tin), near St. Austell | 2 1/2 | 50 | |
| 1024 | Moditham & Marrabro (copper & lead) | 1 1/2 | 2 1/2 | |
| 250 | North Fowey Consols | — | 25 | |
| 1024 | Okel Tor (lead) | 1 1/2 | 4 1/2 | |
| 128 | Par Consols (copper), St. Blazey | 5 1/2 | 650 | |
| 406 | Penhaguer | 1 | 6 | |
| 9048 | Pentire Glas (silver-lead), St. Minver | 5 | 8 | |
| 300 | Phoenix (copper and tin), Liskeard | 1 | 240 | |
| 5000 | Roche Rock (tin), Roche, near St. Austell | 1 | 1 | |
| 6000 | Rocks and Trevellick (tin), St. Austell | 4 1/2 | 5 1/2 | |
| 10000 | Silver Valley & Wh. Brothers (cop. & tin) | 1 | 1 1/2 | |
| 250 | South Caradon (copper), St. Cleer | 30 | 115 | 115 120 |
| 250 | South Trelawny (lead), near Liskeard | 31 | 7 1/2 | |
| 250 | South Wheal Josiah (copper), Calstock | 2 | 4 | 3 |
| 999 | St. Minver Consols (silver-lead) | 1 | 6 | |
| 128 | Takenbury (copper), St. Ives, Liskeard | 8 1/2 | 1 1/2 | 1 1/2 |
| 2048 | Trevellick Consols (tin and copper), Lanivet | 1 1/2 | 1 1/2 | |
| 512 | Treburgh United (lead), St. Teath | 1 | 5 | |
| 600 | Tregardock | 10 | 7 | |
| 250 | Tregardock (silver-lead), Wadebridge | 1 | 7 | |
| 250 | Trethene (silver-lead), Menheniot | 1 1/2 | 12 | 12 13 1/2 |
| 512 | Trethry (copper), St. Cleer | 7 | 7 | 18 30 |
| 512 | Treville (lead), Lewannick | 2 1/2 | 8 9 | 9 |
| 5000 | Wearraggan Consols (copper) | 1 1/2 | 1 1/2 | 1 1/2 |
| 250 | West Caradon (copper), Liskeard | 20 | 106 110 | 110 112 1/2 |
| 512 | West Fowey Cons. (tin & cop.), St. Blazey | 10 | 60 | |
| 1024 | West Par Consols (copper), St. Blazey | 3 | 4 | |
| 1024 | West Phoenix, Liskeard | 3 | 4 | |
| 2500 | West Polgoth (tin), St. Ewe & St. Mewan | 5 | 3 | |
| 1228 | Wheal Arthur (copper), Calstock | 1 1/2 | 2 | 3 |
| 2342 | Wheal Calstock (copper), Calstock | 9 | 9 | |
| 3000 | Wheal Dora (tin and copper), St. Cleer | 3 | 3 1/2 | 4 |
| 182 | Wheal Enns (lead), St. Erme | 12 | 20 | |
| 1000 | Wheal-an-Groze (tin), St. Columb Major | 5 | 5 6 | |
| 250 | Wheal Kingston (copper and silver-lead) | 1 | 1 | |
| 6000 | Wheal Langford (copper and silver-lead) | 1 1/2 | 1 1/2 | 1 1/2 |
| 1024 | Wheal May (silver-lead and copper) | 1 1/2 | 3 | |
| 512 | Wheal Mary Ann (lead), Menheniot | 6 1/2 | 66 1/2 | 64 65 1/2 |
| 3000 | Wheal Penhale (lead and copper) | 2 1/2 | 5 1/2 | |
| 512 | Wheal Sophia (silver-lead), Lantret | 7 | 7 | |
| 512 | Wheal Spry (copper and lead), St. Columb | 4 | 1 | |
| | Wheal Tom (tin & cop.), Stoke Clims | 5 | 6 1/2 | 7 1/2 |
| 1024 | Wheal Tremar (copper), St. Cleer | 1 | 1 | |
| 3000 | Wheal Trevellick (tin), Lanivet, Bodmin | 2 1/2 | 6 | |
| 520 | Wheal Trelawny (silver-lead), Liskeard | 3 1/2 | 55 1/2 | 55 60 |
| 250 | Wheal Trelawny (copper), St. Ervan | 1 1/2 | 2 1/2 | |
| 1024 | Wheal Trelawny (silver-lead), Liskeard | 1 1/2 | 8 1/2 | 8 1/2 |
| 910 | Wheal Vincent (tin), Altermun | 7 1/2 | 6 1/2 | |
| 128 | Wheal Violet (tin and cop.), St. Stephens | 5 | 5 1/2 | |
| 184 | Wheal Vyvyan (cop. & tin), Constantine | 60 | 60 | |

ST. AGNES, NEWLYN, AND FERRANZABULO.

| | | | | |
|------|---|--------|----------|-----------|
| 107 | Budnick Consols (tin), Ferranzabulo | 5 1/2 | 9 | |
| 250 | East Tynwathayle (copper), St. Agnes | 5 | 10 12 | 12 |
| 512 | East Wheal Leisure (copper) | 9 | 18 20 21 | 17 1/2 20 |
| 128 | East Wheal Rose (silver-lead), Newlyn | 80 | 575 | 550 555 |
| 262 | North Wheal Leisure, Ferranzabulo | 1 | 12 | |
| 1160 | Perran St. George (copper and tin) | 21 1/2 | 45 | |
| 2500 | Garras (silver-lead), near Truro | 5 1/2 | 4 1/2 | |
| 500 | Tynwathayle (cop.), Illogan & St. Agnes | 70 | 44 | |
| 3000 | West Shepherd (silver-lead and copper) | 2 1/2 | 2 | |
| 2048 | West Wheal Rose (lead), Newlyn | 2 1/2 | 3 | |
| 400 | Wheal Arthur (lead), near East Wh. Rose | 17 | 49 | |
| 400 | Wheal Friendly (tin), St. Agnes | 70 | 65 | |
| 4000 | Wheal Golden (lead), Ferranzabulo | 2 | 5 6 | |
| 216 | Wheal Henry (copper), Kea, near Truro | 25 | 8 1/2 | |
| 128 | Wheal View, Ferranzabulo | 3 | 5 | |

GWENAP DISTRICT.

| | | | | |
|------|-----------------------------------|-------|--------|-------------|
| 1056 | Carvannall (copper), Gwenap | 2 1/2 | 5 1/2 | |
| 128 | Comfort (copper), Gwenap | 65 | 70 75 | 85 95 |
| 96 | Great Consols (copper), Gwenap | 1000 | 250 | |
| 252 | Lanarth Consols (copper), Gwenap | 10 | 10 1/2 | 9 1/2 |
| 96 | Tresavean (copper), Gwenap | 20 | 22 1/2 | 210 220 |
| 120 | Trethellan (copper), Gwenap | 8 | 21 22 | |
| 120 | Trevelick and Barter (copper) | 180 | 285 | 240 245 250 |
| 300 | United Mines (copper), Gwenap | 300 | 110 | |
| 120 | West Trethellan (copper), Gwenap | 15 | 20 | |
| 8725 | West Wheal Jewel (tin and copper) | 12 | 2 | 2 |
| 512 | Wheal Trevelick (copper), Gwenap | 6 1/2 | 17 | |

REDRUTH DISTRICT.

| | | | | |
|------|---|----|--------|--------------|
| 1024 | East Buller (copper), near Redruth | 2 | 7 1/2 | 5 1/2 7 |
| 128 | East Carn Brea (copper), Redruth | 4 | 3 | |
| 250 | East Soton and Wheal Maude, Redruth | 4 | 4 1/2 | |
| 250 | East Tolgus (copper), Redruth | 4 | 19 | |
| 250 | Graham and St. Aubyn (copper) | 80 | — | 48 50 52 1/2 |
| 1024 | North Buller (copper), Redruth | 4 | 14 15 | 12 15 |
| 120 | North Wh. Buller, or St. John Tolgus | 3 | 7 | |
| 250 | North Trevelick (tin and copper), Redruth | 1 | 1 | |
| 250 | North Tolgus (copper), Redruth | 7 | 16 1/2 | 4 1/2 |

REDBRUTH DISTRICT.

| | | | | |
|------|-------------------------------------|--------|-------|------------|
| 256 | South Tolgus (copper), Redruth | 16 | 150 | 145 150 50 |
| 5000 | Trevelick Consols (copper), Redruth | 6 | 2 1/2 | 2 1/2 |
| 128 | West Buller (copper), Redruth | 10 | 900 | |
| 500 | Wheal Daniel (copper), Chacewater | 10 | 10 | |
| 182 | Wheal Elizabeth (copper), Redruth | 19 | 20 | |
| 500 | Wheal Mary (copper), Redruth | 15 1/2 | 7 1/2 | |
| 128 | Wheal Plenty (copper), Redruth | 19 | 35 39 | |
| 126 | Wheal Union (copper), Redruth | 40 | 45 50 | 45 50 |
| 512 | Wheal Selena (copper), Redruth | 1 | 1 1/2 | |
| 1024 | Wheal Uney (tin and copper) | 2 | 1 1/2 | |

ILLOGAN DISTRICT.

| | | | | |
|------|---|--------|--------|-----------|
| 1000 | Carn Brea (copper and tin), Illogan | 15 | 120 | 120 125 |
| 2510 | Cook's Kitchen (copper and tin), Illogan | 15 1/2 | 10 | 9 1/2 10 |
| 128 | East Pool (tin and copper), Pool, Illogan | 24 1/2 | 160 | 160 170 |
| 94 | East Wheal Croft (copper), Illogan | 125 | 150 | 150 160 |
| 320 | North Wheal Bassett (copper), Illogan | 2 1/2 | 3 1/2 | 3 1/2 |
| 6000 | North Wheal Bassett (copper and tin) | 1 | 15 | 15 15 20 |
| 100 | North Pool (copper and tin), Pool | 45 | 420 | 450 460 |
| 3000 | Polgaroe (copper and tin), Pool | 1 | 5 1/2 | 5 1/2 |
| 2000 | South Carn Brea (copper), Illogan | 10 | 6 1/2 | 6 1/2 |
| 1100 | South Dolcoath (copper), Illogan | 6 | 6 1/2 | 6 1/2 |
| 496 | South Wheal Bassett (copper), Illogan | 10 1/2 | 365 | |
| 496 | South Wheal Bassett (copper), Illogan | 37 1/2 | 605 | 302 1/2 |
| 6000 | Tincoff (copper and tin), near Pool | 7 | 8 1/2 | 8 1/2 |
| 940 | West Tolgus (copper), Illogan | 13 1/2 | 7 1/2 | 6 1/2 |
| 512 | West Bassett | — | 25 27 | 24 1/2 25 |
| 500 | West Wheal Towan (copper), Illogan | 15 | 12 1/2 | 12 1/2 |
| 1000 | Wheal Agar (copper), Illogan | 6 | 5 1/2 | 5 1/2 |

CAMBORNE DISTRICT.

| | | | | |
|------|--|-------|---------|--------------|
| 1000 | Camborne Consols (copper), Camborne | 7 | 7 1/2 | |
| 250 | Conduvor (copper and tin), Camborne | 20 | 112 1/2 | 100 105 115 |
| 1000 | Copper Bottom (copper), Crowan | 7 | 9 | |
| 250 | Cran and Belawa (copper), Camborne | 41 | 25 | 25 |
| 180 | Dolcoath (copper and tin), Camborne | 252 | 18 20 | |
| 1024 | Gustavus Mines (copper), Camborne | 6 1/2 | 5 1/2 | 5 1/2 |
| 320 | Kansgoe (tin and copper), Camborne | 10 | 160 | 155 160 |
| 140 | North Keskew (copper), Camborne | 10 | 6 1/2 | 6 1/2 |
| 1024 | Pendarves Consols (copper), Camborne | 3 1/2 | 6 1/2 | 6 1/2 |
| 1000 | Pendarves and St. Aubyn (tin and copper) | 5 | 6 1/2 | 10 12 |
| 1000 | Stray Park and Camborne Vein (copper) | 15 | 17 | 15 16 17 1/2 |
| 1200 | Tolcarne (tin and copper), Camborne | 8 | 5 | |
| 200 | West Seton (copper), Camborne | 65 | 170 | 150 160 |
| 2500 | Wheal Harriet (copper), Camborne | 1 | 1 1/2 | 1 1/2 |
| 198 | Wheal Seton (tin and copper), Camborne | 107 | 240 | 225 230 |
| 267 | Wheal Tryphena (tin and copper) | 40 | 38 | |

ALFORD DISTRICT.

| | | | | | |
|------|--|--------|---------|---------|-----------|
| 224 | Anty-Cro (silver-lead), Talyon | 3 | 10 | 10 | |
| 000 | Bishopston (silver-lead), Glamorganshire | 2 | 10 | 10 | |
| 000 | Blaenavon (iron) | 50 | 10 | 12 | |
| 000 | British Iron, New, regis. (iron) | 12 | 8 | | |
| — | Ditto ditto, scrip | 10 | 10 | 10 | |
| 0000 | Bronfloy (lead) | — | 4 | 4 | |
| 000 | Bryon-Arian (lead), Cardiganshire | 2 | 2 1/2 | 2 1/2 | |
| 000 | Bryntal, Llanidloes, Montgomeryshire | 24 | 12 14 | | 15 17 1/2 |
| 000 | Bwlch Consols (silver-lead), Cardiganshire | 4 | 4 | 4 | 4 1/2 |
| 000 | Cae-Gynod (silver-lead), Cardiganshire | — | — | — | — |
| 000 | Cannau-y-Siam Gof (coal), Swansea | 10 | 2 | 2 1/2 | |
| 000 | Cefn Bruno (lead), Cardiganshire | 6 | 6 | 5 1/2 | 50 55 1/2 |
| 000 | Court Grange (silver-lead), Cardiganshire | 10 | 12 | 12 | |
| 000 | Craig-y-Mwyn (lead), Llanrhadr, Mont. | 8 1/2 | 10 1/2 | | |
| 000 | Cwm Daren | 1 | 3 | 3 | |
| 000 | Cwm Eriin (lead), Cardiganshire | 6 | 6 | 6 1/2 | |
| 000 | Cwm Selson | — | 4 | 4 | |
| 28 | Cwmystwyth (lead), Cardiganshire | 60 | 100 | 100 | |
| 000 | Daren (lead), Cardiganshire | 2 | 8 1/2 | 9 10 | 8 |
| 000 | Dyfnegan (lead) | 10 | 11 | | |
| 50 | East Daren (lead), Cardiganshire | 17 | 65 | | 55 60 |
| 280 | Eagair Lee Llanfihangel-y-Croethin | 44 | 55 | 5 1/2 | |
| 284 | Freid Llywyd Mines (lead) | 12 | 3 1/2 | | |
| 000 | Gelli-rol-vin (silver-lead), Cardiganshire | 1 | 5 | 5 | |
| 000 | Goginan (lead), Cardiganshire | 40 | 200 | | |
| 000 | Liaburne (lead), Cardiganshire | 75 | 700 | | |
| 000 | Llynmales (lead), Cardiganshire | 5 1/2 | 8 9 | | 6 7 |
| 000 | Llyn-y-llan (iron) | 50 | 50 | 50 | |
| 000 | Mertilyn (lead), Flint | 2 1/2 | 4 1/2 | 5 | 4 1/2 |
| 000 | Montgomery (lead and copper) | 7 | 23 | 11 1/2 | |
| 000 | Nanteos (lead), Cardiganshire | 34 | 30 | 30 | |
| 000 | Nant-y-Caf (copper), near Rhayader | — | 5 5 1/2 | | |
| 34 | Pennant and Craigwen (lead) | 3 | 3 | 3 | |
| 000 | Pen-y-bank and Ergiddol (lead) | 4 | 6 1/2 | | |
| 000 | Rhoswedol and Bachelidon (lead) | 10 1/2 | — | — | |
| 000 | Rhydydd Iron (iron), Rhynnydd | 50 | 12 | | |
| 000 | Ditto New | 7 | 3 | 3 | |
| 000 | South Wales Mining Company | 1 | 1 | 1 | |
| 000 | Tyn-y-Worgold (slate), near Carnarvon | 4 | 4 1/2 | 5 | |
| 000 | Tyflwyd (lead), Cardiganshire | 2 | 2 1/2 | 2 1/2 | |
| 48 | Welsh Goginan (silver-lead), Cardiganshire | 1 1/2 | 1 1/2 | 2 1/2 3 | |